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Performance Management in a German Hidden Champion - an Action Research investigation

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Abstract

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Keywords: Performance Management, Action Research, Small and medium sized companies, SME, Hidden Champion, Balanced Scorecard, Strategy Map

Purpose - This thesis addresses the lack of research on Performance Management (PM) in Hidden Champions (HCs) due to development and implementation of a HC tailored PM system (PMS) in Action Research Design (AR). A HC tailored strategy map and PMS framework were elaborated to improve the financial and non-financial performance of the HC.

Design/methodology/approach - A longitudinal case study with two AR cycles were performed to develop the HC tailored strategy map and framework for the PMS including their implementation using mixed methods data collection. A validated HC tailored strategy map and framework for the PMS implementation are presented.

Findings - Findings show significantly increased financial and non-financial performance of the HC. The revenue of the case company increased by 11.6%, the return on revenue increased 3% up to 17%, customer satisfaction grew, throughput times shortened and leadership competencies improved. Findings further show that AR is an effective procedure for HC tailored PMS design and implementation.

Research limitations and practical implications - The findings are based on one case study and needs to be tested in other HCs. Findings should be of interest to scholars in the field of PM, as well as practitioners improving financial and non-financial performance.

Originality/value -This thesis contributes to knowledge of PM in HCs, and AR, as it provides a validated HC strategy map and framework for HC tailored PMS implementation in a HC. It provides an approach for practitioners to improve financial and non-financial performance in HCs.

Acknowledgements

Though this section is at the beginning of the thesis, it stands as one of the final steps of the doctoral journey. I started the DBA program 8 years ago, in 2010, with the aim to finish before I had turned 50. Now I am 51 and, as I had to change my plans several times, I changed my way of thinking, my behaviour, and my ideas, approaching complex projects with several stakeholders. Even though I knew that research is a collaborative activity, I had to learn that it was not easy to harmonise all the different and sometimes conflicting interests. My experience of the DBA program was that of a challenging and demanding journey, with an important, and less intensive, expected personal development through critical self-reflection, especially pertaining to my own strengths and weaknesses.

Many people were part of the research journey and I want to say thank you to all who have directly, or indirectly, contributed and participated in this important project in my life. I would like to thank Eva Niemann and Nancy Harding, who supported in the teaching phase of the DBA program and helped in conquering the first obstacles in the project. The subsequent research phase was supported, in the practical part, by David Bright, who gave important guidance. The second phase of the research project was completed with the intensive and helpful support of Anna Zueva-Owens. I have to thank Anna for so much, especially for her personal engagement and for her patience and consistency in the demanding phase of writing and reworking the thesis. Anna helped me reach a high level of clarity and differentiation.

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List of abbreviations

AR	Action Research
BPM	Business Process Management
BSC	Balanced Scorecard
BI	Business Intelligence Software
CLC	Company life cycle
DBA	Doctor of Business Administration
EU	European Union
EVA	Earned Value Analysis
GDP	Gross Domestic Product
HR	Human Resource
HC	Hidden Champion
HGC	High Growth Companies
ICT	Information and Communication Technologies
KPI	Key Performance Indicator
M&E	Machine and Equipment (business sector)
NACE	Statistical classification of economic activities in the EU*
PM	Performance Management
QM	Quality Management
R&D	Research and Development
SEW	Socio Emotional Wealth
SME	Small and Medium sized Enterprises

* = The statistical classification of economic activities in the European Community, abbreviated as NACE, is the classification of economic activities in the European Union (EU); the term NACE is derived from the French *Nomenclature statistique des activités économiques dans la Communauté européenne*.

1 Introduction

This thesis addresses the lack of research on Performance Management in Hidden Champions - a particular type of Small and Medium Sized Enterprises (SMEs), through the development and implementation of a Hidden Champion specific Performance Management System using an Action Research Design.

The term “Hidden Champions” was coined by Hermann Simon in the 1990s during an analysis of the export strength of a specific sub-group of companies in Germany. These companies must be in the number one, two, or three position in its world market, or in the number one position in its European market. Second, it must be small or medium in size and are often family-owned. Third, these companies are relatively unknown worldwide and even within Germany, but regularly have world market shares ranging between 70% and 100% (Balinski, 2013, Simon, 1992a). While Hidden Champions are generally doing well, they are also facing challenges of SMEs due to the small size of the Hidden Champions. The small size of a company leads to specific advantages, such as flexibility, innovative products, extreme closeness to customers and highly loyal and experienced employees, but SMEs and Hidden Champions are also facing problems due to difficult access to financing, limited resources, difficulties in attracting new qualified personnel, and difficulties in entering new markets. Several studies on SMEs worldwide agree on these facts (Bianchi et al., 2015, Busi and Bititci, 2006, Passaro and Thomas, 2010).

The overall aim of this study was to improve the financial and non-financial performance of the case company, an SME and Hidden Champion. The theoretical contribution of the research project was the development of a Hidden Champion specific approach for the design and implementation of Performance Management in Hidden Champions. The practical contribution of the project consists of an actual development, implementation and validation of a Performance Management System in the case of a Hidden Champion.

This chapter outlines the research problem: That despite the fact that the benefits of Performance Management are recognised for SMEs and Hidden Champions, Performance Management tools are rarely used or implemented in SMEs and Hidden Champions. The research project was conducted in one case company in the German special purpose machinery manufacturing industry belonging to the group of Hidden Champions. The context and background of the case company is explored. The research objectives, consisting of the design and implementation of Performance Management in the Hidden Champion using an Action Research Design, are stated. The theoretical and practical contribution of the research project and the research approach, including the justification of the Action Research Design, are described.

1.1 Research gap

SMEs including Hidden Champions are the backbone of every developed economy worldwide (World Bank, 2009, Edinburgh Group, 2017). SMEs generate approximately 50-60% of the gross value added and employ approximately 66% of employees worldwide. Empirical research shows that larger firms in general perform better than SMEs, in terms of paying higher wages, producing more output per given level of input, having a higher likelihood of surviving, obtaining more patents, and exporting more than small firms (Sousa and Aspinwall, 2010, Bititci, 2015, Simon, 2012, Taylor and Taylor, 2014). This research project deals with the issue of improving the financial and non-financial performance of an Hidden Champion using a Performance Management approach. Performance is vital for all companies, especially financial performance, but non-financial performance is also important as it pertains to the use of relational, structural, and human capital (Wernerfelt, 1984, Kaplan and Norton, 1992, Kaplan and Wisner, 2009). A large amount of financial and non-financial resources acts as an enabler for companies. The use of Performance Measures in managerial processes optimises the organisation’s ability for efficient resource allocation decisions and improves performance (Markovits, 1998, Markovits, 2008, Wernerfelt, 1984, Kaplan and Wisner, 2009).

The important role of improved financial and non-financial resources must also be seen in relation to the size of operations, which is commonly expressed through “economies of scale” that apply to a variety of business situations and can be described as cost advantages that enterprises obtain due to size, output, or scale of operation through fixed cost reduction per unit (March and Sutton, 1997, O'Regan and Ghobadian, 2004, Sarmiento and Devins, 2013, Moore, 1959). For instance, SMEs and Hidden Champions have fewer salespeople, less specialised sales managers, smaller revenues, fewer product lines, and fewer regular customers. They are less likely to export than large firms, but firms with greater sales and higher revenue from exporting are better able to cover the fixed costs of entering foreign markets (Taylor and Taylor, 2014). It is not only the resource availability that differentiates SMEs and Hidden Champions from larger companies. Storey (1994) points out that these companies are not a scaled-down version of a large firm, and we cannot simply look at the needs of SMEs and Hidden Champions by scaling down the needs of large firms. The small size leads to specific advantages, such as flexibility, innovative products, extreme closeness to their customers, and highly loyal and experienced employees, but this also comes with disadvantages as they usually face problems relating to difficult access to financing, limited resources, and difficulties in attracting qualified personnel and entering new markets (Storey, 1994, Bianchi et al., 2015).

Therefore, it is important to take a closer look at the definition and measurement of the different interpretations of the concept of performance, especially for Hidden Champions. The perception and measurement of performance is defined in chapter “2.6 - Definition of performance” in this thesis. Besides the undeniably important role of improved financial performance, the measurement of performance is unique for every company and is influenced by effectiveness and efficiency and depends largely on the perceptions of the different stakeholders (Bititci, 2015, Gray et al., 2015).

The past years, especially during the 2008 financial crisis, have shown that the improvement of financial and non-financial performance is vital for the

survival in fast changing markets (Bititci, 2015). This includes the implementation of sustainable competitive performance strategies, especially the development of profitability and capability (Bianchi et al., 2015, Hudson et al., 2001a, Hudson et al., 2001b, Garengo et al., 2005). There is evidence in the research literature that both the use of performance measures and the design of a Performance Measurement System (PMS) achieve and sustain financial and non-financial performance in organisations, including SMEs (Bititci, 2015, Bititci et al., 2012, Garengo et al., 2005, Taticchi et al., 2008). Several frameworks and approaches for the design of strategic Performance Management Systems have been developed and discussed by various researchers since the mid-1990s, e.g. the Balanced Scorecard (BSC) from Kaplan and Norton. These frameworks will be discussed in section “2.7 - Definition of Performance Management” in this thesis. As will be shown later, these approaches have been mainly developed for large sized companies (Bianchi et al., 2015).

The SME and Hidden Champion characteristics will be elaborated and the impact of the design and formulation of adequate measures and the implementation and operation of a Performance Management System will be discussed. Previous research on PMS in SMEs does not take into consideration the fundamental differences between SMEs, Hidden Champions and larger companies, but these differences influence the design and implementation of Performance Management Systems in Hidden Champions. The specific characteristics of SMEs and Hidden Champions are not properly considered in the existing literature for the identification and analysis of how to effectively design and implement Performance Management in smaller firms (Ates, 2013, Garengo et al., 2005, Bititci et al., 2012). No specific literature was found regarding Performance Management in Hidden Champions. This thesis contributes to addressing the identified research gap of lack of research on PMS design and implementation in SMEs and Hidden Champions. As later shown in the literature review in “2.8 - Performance Management in SMEs and Hidden Champions“, recent academic literature provides limited research on Performance Management and managerial activities that are part of the Performance Management practices in the context of SMEs and

HCs (Oltra and Flor, 2010, Banchieri et al., 2011, Edinburgh Group, 2017, Hu et al., 2017).

The fact that there are no validated Performance Management methodologies that are specifically oriented towards the characteristics of a SME results in a low level of implementation of PM in SMEs (Chalmeta et al., 2012, Bianchi et al., 2015). A quote from Neely (2002) summarises the attitude of SMEs regarding Performance Management: "*For small and medium-sized companies often the best justification is 'feel', even when the numbers don't add up. Measurement is a luxury – success and failure are obvious."* (Neely et al., 2002). However, as argued before, SMEs and Hidden Champions need to develop and implement sustainable performance strategies in order to realise more efficient and effective managerial and operational processes to improve their financial and non-financial performance (Chalmeta et al., 2012, Bianchi et al., 2015). This requires the design and implementation of a tailored approach and a system of indicators to control the performance of an Hidden Champion, as well as checking this performance against previously defined goals, while taking into account the characteristics of this kind of enterprise (Hudson et al., 2001a, Garengo et al., 2005, Taylor and Taylor, 2014). The indicators and measures should comprise a balanced set of targets that Hidden Champions should pursue in the short and long run according to a sustainable development perspective (Bianchi et al., 2015).

There is some literature regarding PM design and implementation in larger companies, especially regarding the use of the Balanced Scorecard (BSC) - as described later in section 2.7.2 - Development of the Balanced Scorecard concept. The BSC is one of the most widely accepted instruments through which to implement a PM system (Kaplan and Norton, 1992, Kaplan and Norton, 2001a, Kaplan and Wisner, 2009). The BSC uses strategy maps to convert a formulated performance strategy into practice. Strategy maps arrange strategic goals in cause and effect relationships of vertical sets of linked objectives and performance measures over horizontal perspectives, typically Financial, Customer, Process, and Learning & Growth. These are

called strategic themes that represent hypotheses of the strategy operationalisation and are quantifiable and measureable in every department of a company. In order for them to be implementable, these concepts must be understood and executed by every employee. The foundation of a company performance strategy is, as Porter argues, the selection and execution of hundreds of activities. Strategy implementation cannot be limited to a few people at the top of an organization (Porter, 1996). An organization must be aligned to its strategy, and Performance Management Systems create that alignment through workable strategy themes with specific performance measures.

A critique of the traditional PM approaches, especially with regard to the BSC, is the level of abstraction of the theoretical concept of the BSC and the enormous usage of resources to design a BSC without a guideline or specific measures for implementation. The missing adjustment of the BSC for SMEs and Hidden Champions is one of the reasons for the low utilisation of PM approaches like the BSC in smaller firms. Another reason is the missing operational implementation strategies for Performance Management in SMEs and Hidden Champions (Cocca and Alberti, 2010, Garengo, 2009, Hudson et al., 2001b, Wernerfelt, 1984). The literature review shows that there are publications of BSC related strategy maps for larger companies, but these do not consider the SME and Hidden Champion characteristics. The theoretical contribution of this research project is the design of a BSC strategy map that takes into account the SME and Hidden Champion characteristics.

The practical contribution of the presented research project focuses on the development, implementation, and validation of the PM approach for the case SME. The approach was developed in cooperation with the participants (SME owner and manager) to gain acceptance, and an informed researcher to ensure a well-grounded approach with the focus on improvement of financial and non-financial performance. This procedure ensured a solid theoretical foundation of the developed PM concept, on the one hand, and, on the other hand, practical feasibility for the PM implementation (Bititci et al., 2016, Bititci, 2015).

1.2 Case SME used in the study

The case company in this research project is a worldwide acting SME that belongs to the group of Hidden Champions in the business sector of special purpose machinery manufacturing / industrial processing machinery. The case company is located in North Rhine-Westphalia in Germany, a specialised region for machine manufacturing. Germany has traditionally had a unique position in the global economy due to a strong and innovative export industry. The positive net export balance of a country increases the gross domestic product, which is the total value of the finished goods and services it produces in a given period of time. Germany is one of the top three exporting countries in the world and benefits from this economic advantage. On a per-capita basis, Germany´s exports are 54% higher than those of France, 56% higher than the U.K.'s and 54% higher than Italy's (Eurostat, 2017). Germany has successfully leveraged the "Made in Germany" tag as a brand synonymous with product reliability and quality (Simon, 1992a). Germany's export success is strongly associated with highly visible companies like Mercedes-Benz, Volkswagen, Siemens, Bosch and Bayer. However, the real success stories come from Germany´s SMEs, which dominate European and world markets by the hundreds – the so-called Hidden Champions (Simon, 1992a). German SMEs are facing the general challenges of smaller firms, as well as experiencing additional difficult local conditions resulting from some of the world's highest wages, longest holidays, and shortest working hours, which ultimately yields relatively high wage costs (Simon, 1996, Simon, 2012).

The evidence of the classification of the case company as SME and Hidden champion will we shown later in chapter 2. The case company is one of the principal pioneers in resin casting technology, which is used in different industry sectors such as automotive, railway, medicine, and electrical engineering. The process technologies and plant engineering of the company were developed by the former founder of the company, around 1940, and have been improved and refined over the years. Today the technology is used to cast and impregnate electronic components with high precision and economic efficiency for customer benefits. The company is a world leader in its market and has subsidiaries in Japan and China. The key figures of the

SME at the beginning of the research project in 2015 are a turnover of € 23.3 million, 135 employees and total assets of € 20.8 million (internal data of the company in 2015).

The first contact between the researcher and the SME was in 2009 in a consulting project regarding the implementation of a quality management system following the ISO 9001 standard. From that time, a trustful cooperation with the management and employees was established and is still in place until today. The company was handed over in 2014 from the senior owner, who had a great deal of practical experience, to his two sons. Like most heads of departments in the case company, the two sons have undergone vocational education and training in the company and made their professional career in the company. The two owner brothers subsequently attended the local university of applied science and completed a technical degree, and so did seventeen other employees of the company. Thirteen employees have a master craftsman qualification. Employee turnover is very low, keeping at below 4% in the last three years, and when an employee leaves the company due to being offered a higher wage from a larger company, they usually come back within six months of their trial period. Their reasons for coming back to the SME are largely related to the diversified work in the different customer projects, where they feel like valued experts in their field and experience a better work climate than in larger companies.

The two sons of the former owner of the case company are aware of their lack of managerial experience and feel urgency and pressure to succeed and to show that they can follow in the large footsteps of their father. In 2015, the company experienced a weak phase with decreasing revenues. This gave priority to the question of financial and non-financial performance. The two sons were highly interested in the development of their managerial capacity trough implementation of Performance Management, and wanted to support the research project. They wanted to achieve financial and non-financial performance improvements in their company, which would also serve as a practical contribution of this research project. The identified research gap of Performance Management in SMEs and Hidden Champions was studied well in

the company and it was possible to provide a theoretical contribution of the design of a tailored Performance Management approach for Hidden Champions (Wilson, 2003). The good and trustful relationship of the researcher with the senior owner, the two sibling owners and the employees led to openness in all aspects of the cooperation, especially in meetings and interviews discussing even critical or confidential internal information.

1.3 Research motivation

The researcher of this study has worked for over 25 years as a management consultant, mainly for SMEs in Germany. An overarching experience from these consulting projects was that financial and non-financial performance is a vital aspect in every company, but only few companies manage this important aspect of performance via a systematic approach. Another interesting experience was that comparable companies working in the same business sector and with similar surrounding conditions develop differently, in terms of financial and non-financial performance. Managers judge performance (mainly financial performance) as important - but systematic Performance Management is a blind spot in SMEs. Recent research, carried out by the researcher during the course of the DBA program, in the form of a pilot study confirmed the difference in knowledge about the potential benefits of PM and the usage of systematic approaches to PM in SMEs (Schlüter, 2007, Schlüter, 2014). These experiences and findings regarding SMEs were confirmed by several authors (Bititci et al., 2011, Sousa and Aspinwall, 2010, Sousa et al., 2006, Taylor and Taylor, 2014). This insight leads to the idea of the research project of the design and implementation of the development of a tailored PM approach in a Hidden Champion case to improve the financial and non-financial performance of the case company. The generated knowledge in this project should be interesting for other scholars working in the field of SME and Hidden Champion research and for practitioners interested in a performance strategy to improve financial and non-financial performance through Performance Management.

1.4 Research objectives

The aim of the research project was to improve the financial and non-financial performance of a German Hidden Champion and, concurrently, contribute to both the practical and theoretical knowledge of the research subject of Performance Management in Hidden Champions. In this study, Action Research Design was used to explore the process of design and implementation of a Performance Management System in a Hidden Champion. The addressed research objectives of the research project, based on the identified research gap, were:

- To design a Performance Management approach for a German Hidden Champion in the special purpose machinery manufacturing industry as an aid to improve its financial and non-financial performance;

- To implement and validate of this Performance Management approach using Action Research Design;

- To reflect on the results of the implementation in Action Research Design for other Hidden Champions and SMEs.

In order to realise the above stated research objectives, an SME and Hidden Champion tailored Performance Management approach, including a strategy map and a framework for the design and implementation of the Performance Management System, was developed, implemented, and validated in a longitudinal case study.

1.5 Introduction to methodology

The research project was based on an interpretive epistemology that integrate human interest into the study and enables the access to the socially constructed concept of performance through language, shared meanings, and other qualitative instruments. This was realised by means of a participative Action Research approach. The developed Performance Management approach was implemented, reviewed, and validated during two Action Research cycles in a longitudinal case study (Van de Ven, 2007, Creswell, 2007, Harding, 2013). The first cycle focused on the design of a Performance Management approach tailored for a Hidden Champion. The second Action Research cycle concentrated on the implementation of the Performance Management System. Qualitative and quantitative empirical data was gathered, analysed, and discussed in a mixed method approach in a longitudinal case study over a time period of 18 months. The collection of data included interviews, observations, documentary analysis and questionnaires. This led to several findings which contribute to both the practical and theoretical knowledge of Performance Management implementation in a German Hidden Champion. The general phase plan of the research project is shown in the following figure. (Bryman, 2008, Saunders et al., 2012, Ambert et al., 1995, Van de Ven, 2007, Patzak and Rattay, 2009).

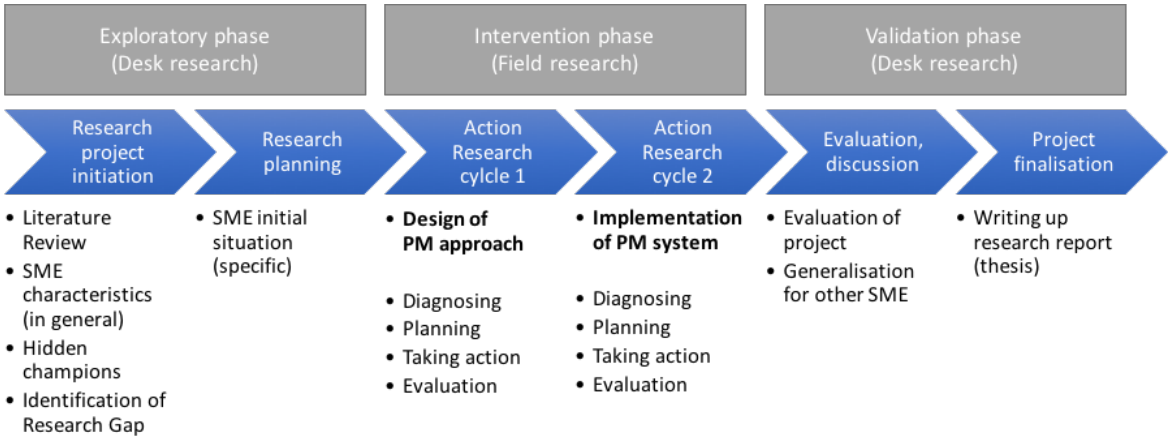


Figure 1 - Phase plan of the research project

One purpose of the use of the chosen participative Action Research Design is to promote organisational learning for the participants and to produce beneficial practical outcomes for the Hidden Champion in the research project (Van de Ven and Johnson, 2006, Saunders et al., 2012). The active involvement of the participants led to re-education, changing patterns of thinking, and a new course of action in the Hidden Champion over the long term (Smith, 2001, Tushman et al., 2007, Patzak and Rattay, 2009). Above all, the research project was intended to start a process of continuous improvement of the financial and non-financial performance of the Hidden Champion that did not come to an end with the end of the research project.

The general course of action in the research project, shown in Figure 2 - The Action Research spiral (Saunders et al., 2012), was filled with specific activities at the beginning of the project in cooperation with the owners and managers of the SME (Schwendiger, 2010, Small and Uttal, 2005).

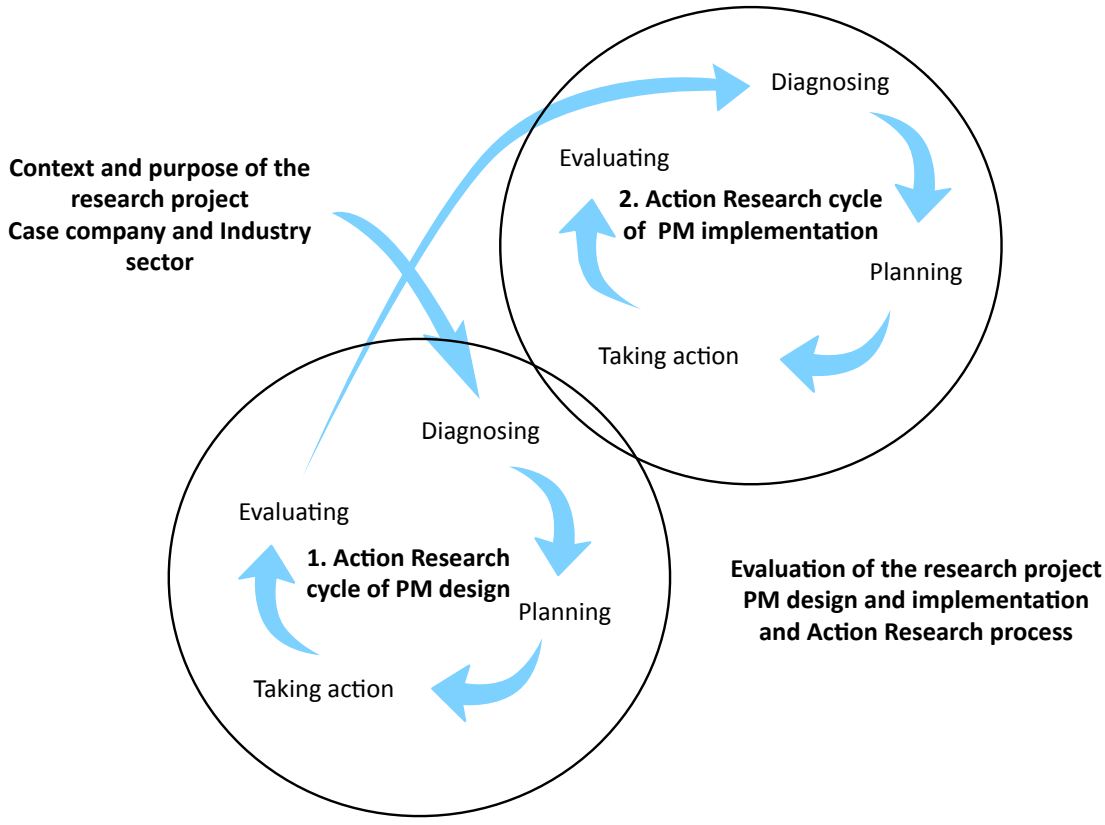


Figure 2 - The Action Research spiral (Saunders et al., 2012)

1.6 Structure of the thesis

The research undertaken and described in this thesis followed three phases with six interacting sub-projects and work packages which structured the activities in the research project shown in Figure 1 - Phase plan of the research project

A major part of the **exploratory phase** (see figure 1) was the identification of the research gap through background research, literature review, and a small amount of fieldwork to acquire a cooperating Hidden Champion. This was done by presentation of the research proposal and discussions about a workable project plan. In this phase, the research objectives and the research strategy were developed and discussed with the SME and Hidden Champion owners and managers, the researcher, and the university supervisor of the research project. The introduction of the research project and the results of the planning activities are presented in chapter “1 - Introduction”.

In chapter “2 - Literature Review” the results of the literature review, regarding the different subjects of the thesis like SMEs and Hidden Champions’ characteristics, Performance, and Performance Management, are presented and discussed. The result of this chapter is a framework for the design and implementation of an SME and Hidden Champion specific Performance Management approach. Chapter “2 - Literature Review” also presents the results of the literature review on performance and Performance Management, development over time, and especially the importance of the Balanced Scorecard. At the end of this chapter, a tailored strategy map for SMEs and Hidden Champion is outlined considering the results of the research literature.

Chapter “3 - Research Design and Methodology” explains the Research Design and Methodology of the chosen Action Research Design. The result of this chapter is a framework for the design and implementation of a Performance Management System in two Action Research cycles. The fieldwork was carried out in the intervention phase (see figure 1) of Action Research cycles 1 and 2, to adapt the developed Performance Management approach

and to implement the tailored Performance Management System in the Hidden Champion. The detailed description and in-depth analysis of the activities performed during these cycles are presented in chapter “4 - Data Collection, Analysis and Findings” of this thesis.

The validation phase (see figure 1) was the third phase and focussed on evaluation and finalisation of the research project. In chapter “5 – Discussion and Recommendations”, a discussion of the findings derived from the data of the fieldwork is presented. The developed strategy map and framework for the design and implementation of the Performance Management System were evaluated and validated by different evaluation workshops in the case company. Recommendations for the development and implementation of the Performance Management framework in SMEs and Hidden Champions are proposed. And finally, chapter “6 - Conclusion and limitations” concludes the research project and proposes possible generalisations and cues for other SMEs and Hidden Champions.

This research project was structured around six chapters as pictured in Figure 3 - Research outline:

Figure 3 - Research outline

The literature regarding SMEs, Hidden Champions, performance, and Performance Management was analysed in the next chapter and a framework for the design and implementation of a Performance Management System was developed. Additionally, a Hidden Champion specific strategy map was presented at the end of chapter 2.

2 Literature Review

2.1 Introduction

The subject of the research project is the design, implementation, and validation of Performance Management in a family owned German SME, Hidden Champion operating in the industry sector of special purpose machinery manufacturing. The characteristics of SMEs, Hidden Champions and family businesses are elaborated and discussed in this chapter with regard to the design and implementation of Performance Management in companies. This chapter of the thesis examines the concepts of performance and Performance Management and shows that the definition of performance is unique for every company and should be derived from the various interests of the company stakeholders.

Over the past decades, Performance Management has evolved from a mainly financial perspective to a more holistic one, integrating non-financial aspects of performance. The concept developed from historical industrial developments from first Performance Measurement approaches of painted wooden performance indicators in the 1880s to recent Performance Management tools like the Balanced Scorecard today. Literature regarding the design and implementation of Performance Management for companies is reviewed, analysed, and used for the proposal of an SME and Hidden Champion specific Performance Management approach. Therefore the Balanced Scorecard of Kaplan and Norton - at present the most common concept of Performance Management - is explored especially with the viewpoint of application in SMEs and Hidden Champions.

The literature review is summarised in a framework for Performance Management design and implementation in SMEs and Hidden Champions. A specific strategy map for a Balanced Scorecard for these kind of companies is also proposed. The developed framework for Performance Management design and implementation in Hidden Champions was further used and validated throughout the course of this research project.

2.2 Characteristics of Small and Medium sized Enterprises (SMEs)

The present research project was conducted in an SME (revenue € 23 million, 135 employees) in the special purpose machinery manufacturing sector in Germany. Definitions of SMEs vary widely across countries and regions - although the criteria include a maximum level for one or more of the criteria – these criteria being: full time employees, annual sales turnover, and amount of total assets in the firm. There may also be a requirement of ownership / management independence from larger corporations (Edinburgh Group, 2017, European Commission, 2003, Reijonen and Komppula, 2010, Schmiemann, 2008, Schweizer, 2012). Small and medium sized enterprises (SMEs) in this thesis are considered to be firms that fit the commonly used definition of the European Commission of being enterprises that employ fewer than 250 persons and which have an annual turnover not exceeding € 50 million, and/or an annual balance sheet total not exceeding € 43 million (European Commission, 2003).

The distribution of economic figures of SMEs is comparable in developed countries in market economies (Hult et al., 2008, Accountants_for_Business, 2009). The worldwide share and contribution of SMEs is displayed in the following table:

	Number of SMEs*	**Share of SMEs***	**Share of employees***	**Value added***
Global	365-445 million	95 %	approx. 66%	52 - 65%
US	28.1 million	99.8 %	52.4 % (50.0 million)	44.4 %
Russia	5.663 million		23,1 % (16.1 million)	22.0 %
China	6.977 million	98.3 %		
India	44.7 million		approx. 40 % (101.0 million)	
Japan	4.69 million	99.7 %	70,2 % (33.2 million)	51.1 %

	Number of SMEs*	Share of SMEs*	Share of employees*	Value added*
EU-28	22.4 million	99.8 %	67% (133.7 million)	57.5%
Germany	3.6 million	99.3 %	60% (26.5 million)	47.0%
Italy	3.8 million	99.9 %	81%	68.1%
France	2.9 million	99.9 %	64 % (14.9 million)	58.0 %
UK	1.7 million	99.7 %	53 % (17.7 million)	50.9 %
Netherlands	862,697	99.8 %	66,7 % (5.4 million)	62.9 %

Table 1 - Structural data of SME in chosen regions

(World Bank, 2009, KFW Research, 2015, KFW Research, 2016, Statistisches_Bundesamt, 2013, Eurostat, 2017, Muller et al., 2015, OECD, 2016a, Ministry of MSME, 2015, OECD, 2016b, Agency, 2016, European Investment Bank, 2013)

* Numbers differ due to regional variations in SME definitions (EU, Asia, US etc.)

Numerically, SMEs dominate the world business stage and represent most private sector businesses (Sousa and Aspinwall, 2010, Ates, 2013). Although precise, up-to-date data is difficult to obtain, estimates suggest that more than 95% of enterprises across the world are SMEs, accounting for approximately 66 % of the worldwide private sector employment. SMEs are undoubtedly important for a strong economic growth and the backbone of most economies, particularly in developing countries (World Bank, 2009, Edinburgh Group, 2017). SMEs play a central role in growth, competitiveness, innovation, and employment rate of a region, because of their flexibility and ability to innovate (World Bank, 2009, Edinburgh Group, 2017). In emerging markets, most formal jobs are with SMEs, which also create 4 out of 5 new positions (World Bank, 2009), but the important role of SMEs and their advantages, due to their small size, is only one side of the issue.

Especially in Europe, the environmental conditions for companies have changed rapidly in the last years (Passaro and Thomas, 2010). It is widely acknowledged that today's marketplace is more fiercely competitive than ever before. The financial crisis of 2008 – which overwhelmed global economies – has adversely affected and weakened SMEs' competitiveness (Busi and Bititci, 2006, Bianchi et al., 2015). Some SMEs have continued to struggle, with revenues and employment levels remaining subdued in the following years. Others have recovered relatively quickly, indicating the resilience of the SME sector. However, many have suffered from reduced access to finance and increased costs of credit (Edinburgh Group, 2017). The key environmental trends and their negative effects and consequences for SMEs are shown in the table 2 - Trends facing SMEs:

Trend	Consequence for SMEs
Market and business globalisation	Increased competition from emerging economies Increased complexity of business networks Challenges in both information and material flow between suppliers, manufacturers, and customers An extreme impulse towards both efficiency and cost saving by large-sized companies
Increased customer focus	A reduction in customer consumption High investments for lowering both costs, lead-times, and increasing quality and overall customer satisfaction; Increasing proliferation of product variety; increased costs; lack of resources and/or competencies needed to satisfy customer demand
Advances in ICT	Huge potential for facilitating and managing the flow of information from suppliers to customers
Knowledge-based economy	Increased importance of knowledge generation and sharing; new knowledge management methods; trust development techniques to foster information sharing
Lack of financial resources	A limited propensity to funding from lending institutions A decreasing support from public sector bodies

Table 2 - Trends facing SMEs

Source: (Busi and Bititci, 2006, Bianchi et al., 2015, World Bank, 2009)

On the other hand showed Burke and Hussels (2013) in a study of early 2 million companies launched in the UK from 1995 to 2005 that exposure to competition in the early stages of a company's life increases its long-term survival prospects and that it is essential that managers understand the benefits of early competition and the measurement of performance (Burke and Hussels, 2013). SMEs and their development play an important economic role, worldwide. The current external trends and consequences SMEs are facing have to be considered in any SME specific instrument. The differences and the characteristics of SMEs will be explored in the next section of the thesis.

The characteristics of SMEs were identified in order to find out which kind of context the Performance Management System will be tailored to. The research literature dealing with the differences between SMEs and large firms is diverse. Storey (1994) already points out that a small SME is not a scaled-down version of a large firm and we cannot simply look at the needs of SMEs by making small what was big (Storey, 1994, Bianchi et al., 2015). Current literature regarding the characteristics of SMEs is summarised in the following list of major distinctive general attributes of SMEs compared to large companies (Garengo et al., 2005, Ates, 2013, Taylor and Taylor, 2014):

- Limited resources (financial, human resource, and time),
- Short-term priorities, flexibility, less formal procedures,
- Internal operational focus and lack of external orientation,
- Learning by doing, tacit knowledge,
- Lack of managerial skills and career development,
- Owner orientation, command, and control culture.

These characteristics are explained below:

Limited resources

SMEs are, by definition, small and have limited resources in form the of finances, human resources, and other resources. They are often overloaded with short-term cash and have payment problems. In SMEs, all employees are involved in the activities of managing the daily work and have no extra time for additional activities, like implementing a suitable managerial system or a strategic planning. This scarcity of resources restricts the ability for external orientation and is the reason for many other characteristics, such as lack of professional development investment and prevalence of tacit knowledge (Ates, 2013).

Short-term priorities, flexibility, and less formal procedures

SMEs achieve coordination and control without formal procedures and are less reliant on paperwork due to a small management team that coordinates all processes in the SME (Taylor and Taylor, 2014). Operational and managerial activities in SMEs tend to be less structured and reflect the process of decision-making and managing the whole business (Garengo et al., 2005). The management team in SMEs is actively involved in the day-to-day operational processes and acts close to the point of delivery – the team members usually behave in a flexible and reactive manner. They tend to concentrate on short term priorities, preferring customer needs, with the consequence that strategic long-term activities and planning slip on to tomorrow's to-do list (Taylor and Taylor, 2014, Garengo et al., 2005). The level of strategic planning is poor and decision-making processes are not formalised. SME managers have the problem that they need to juggle short-term and long-term priorities at the same time without dedicated resources for strategic activities (Ates, 2013).

Internal operational focus and lack of external orientation

A study performed by Taylor (2014) showed that the SMEs that are more externally oriented and actively scan general economic and business conditions, technological trends and capabilities as well as regularly re-analysing their competitive position in the market are more successful than SMEs that are internally oriented (Taylor and Taylor, 2014, Garengo and Bernardi,

2007). But SMEs often do not have the resources to scan the environmental aspects of their business, or to carry out market research and test their products and services (Ates, 2013). SMEs mainly focus on technical aspects and operational issues in response to emerging problems from customers and gain competitive success through technical excellence of the product and production processes (Garengo et al., 2005). SMEs are better at providing ideas for improvement of products, processes, and customers problems (Sousa and Aspinwall, 2010).

Learning by doing, tacit knowledge

Knowledge in SMEs is mainly gained through experience and is often absorbed by means of tacit learning of individuals. SMEs carry out less training than larger firms. SMEs tend not to have formal planning systems which makes it difficult to analyse their training needs. Many SME owners also distrust formal education and qualifications (Taylor and Taylor, 2014). A study from Garengo (2009) shows that SMEs rely on tacit knowledge of their employees and this has a negative effect on competitiveness and cost efficiency for SMEs. Research showed that encouraging knowledge sharing across management functions, and between customers and the organisation, is important for SMEs to improve performance (Garengo, 2009).

Lack of managerial skills and career development

SMEs invest proportionately less in training and management development than large companies. Management practices are linked to the individual skills of the members of the management team, who usually hold multiple roles and are in charge of both operational and strategic functions. Due to this, they usually do not have the necessary time and skills to fulfil this challenging task, and often neglect managerial issues (Garengo, 2009). Operational day-to-day business and customer demands are at a high priority, so managerial tools and techniques, like strategic planning, are perceived as being of little benefit and are usually absent or have low priority (Ates, 2013). A study of Taylor and Taylor (2014) showed that SMEs are less likely to have formal management development programmes and are less likely to develop

managerial competencies due to constrained resources and a preference for informality, which is linked to flexibility (Taylor and Taylor, 2014).

Owner orientation, command, and control culture

SMEs are mostly owner-managed and are led by dominant leaders who set the direction and run the business on the basis of their experience and common sense, which generally results in a command and control management style. The SME owner/manager usually expands their business to the point they can personally manage everything themselves. The ability to manage processes, which primarily affects the way management operates when making decisions and exercising control, determines how well a competitive advantage is sustained (Ates, 2013). Taylor and Taylor (2014) supported this result and argued that the success of an SME is linked to the individuals' and the leader's skills rather than to any specific managerial process or practice (Taylor and Taylor, 2014, Richbell, 2006).

Following the model of organisational culture by Charles Handy (1999), the leadership style in SMEs can be defined as "Power Culture". Handy identified four types of cultures, namely "Power Culture", "Role Culture", "Task Culture", and "Person Culture" to link different organisational structures to company culture. The Role Culture is characterised by functional or specialised areas coordinated by senior management and a high degree of formalisation and standardisation and can be found in larger organisations. A Task Culture is job or project oriented with a net structure often found in project teams. In the Person Culture, the organisation serves and assists the interests of the individuals like in partnerships or some universities. The term Power Culture, of Handy's model of organisational culture, describes best the leadership style in most SMEs. Handy illustrates the power culture in the form of a spider's web with the all-important spiders sitting in the centre, surrounded by ever-widening circles of intimates and influence. The main advantage of this leadership culture is that they are able to make a quick response to any event but they are heavily dependent for their continued success on the abilities of the people at the centre. Size is a problem for power cultures due to

the limited capacities of the leaders. In organisations with this culture, performance is generally judged on results. Working in such organisations requires that employees correctly anticipate what is expected of them from the power holders and perform accordingly (Cacciattolo, 2014, Handy, 1993).

Summary of relevant SME characteristics

This chapter emphasize the relevant characteristics of SME:

SME characteristics
Short-term priorities, flexibility, and less formal procedures
Internal operational focus and lack of external orientation
Learning by doing, tacit knowledge
Lack of managerial skills and career development
Owner orientation, command, and control culture (Power culture)
Limited resources

Table 3 - SME characteristics

These above characteristics of SMEs should not be seen as independent, but rather interdependent. The less formal processes in SMEs can lead to greater informality between employees, management, and stakeholders, and can result in limited resources for data analysis, poorer graphical presentation of information, and a poorer information infrastructure with the effect of internal operational focus and lack of external orientation (Garengo et al., 2005, Taylor and Taylor, 2014). Some of the distinctive attributes of SMEs are positive, such as more flexibility, less bureaucracy, and more comprehensible operating environments with less uncertainty. Others have a negative effect, e.g. fewer resources and less managerial knowledge (Taylor and Taylor, 2014). In the specific case of an SME, these general characteristics are relevant in identifying and deriving effective measures for improvement of financial and non-financial performance. At the end of this chapter, these characteristics are used to define the SME's approach to the design and implementation of Performance Management in the case company.

In the next section of the thesis, the additional characteristics of Hidden Champions - a sub-group of SMEs - are highlighted due to the fact that the case company belongs to this group of companies.

2.3 Characteristics of Hidden Champions

In the 1990s, Herman Simon discussed the question of how Germany has, for many years, sustained its position as one of the top exporters in the world (Simon, 2012). However, the export strength of Germany cannot be explained solely through the activities of large German companies such as, Daimer, Volkswagen, BMW Group, Siemens, Bayer, BASF, Fresenius, Linde, Merck, Thyssen Krupp, Bosch, Continental, Heraeus Holding, Linde, Addidas, Heidelberger Cement, Aurubis, Salzgitter AG, Lanxess etc. (Forbes, 2017), as there must be a large number of small and midsize firms which are also strong exporters (Armario et al., 2008, Meffert and Klein, 2006).

These smaller companies are, however, normally known only in their own area by customers and suppliers, but not to the wider public or the business community. Simon´s research showed that the positive development of Germany's post-war economic success was based on the mid-sized manufacturing sector, collectively known as the "Mittelstand" (SME sector). He identified a more or less homogenous group of companies that are successful in their markets and coined the term "Hidden Champions" for these companies (Simon, 1996).

Hidden Champions are defined as successful, often family-owned, SMEs that are concealed behind a curtain of inconspicuousness, invisibility, and sometimes secrecy. To qualify a company as a Hidden Champion, a company must meet the following three criteria (Simon, 1996): First, it must be in the number one, two, or three position in its world market, or in the number one position in its European market. Second, it must be small or medium in size. Third, a Hidden Champion should have low public visibility (Simon, 1996, Chalmeta et al., 2012). A lot of the Hidden Champions established

their main product as an innovation and were able to keep this single position in the market, or were at least able to keep a leading position (Simon, 2012). Simon found that the corporate culture of Hidden Champions is distinctive. They share values of conservativeness: hard work, strict selection, intolerance of underperformance, low sickness rates, and high employee loyalty and identification. In the 1990s, it was believed, at first, that Hidden Champions were mainly found in German speaking countries. Simon established a framework to describe them and carried out detailed research on them. Subsequently, he found that there are Hidden Champions everywhere around the world (e.g. US, South Africa, and New Zealand), but they are the most frequent in German speaking countries, although companies in Germany are facing difficult local conditions due to some of the world's highest wages, longest holidays, shortest working hours, and strict regulation (Simon, 1996, Simon, 2012). One of Simon's findings, regarding German employees in Hidden Champions, can be summarised as: "At work, the German worker works". Despite the relatively short time spent at work, worker productivity is high. Due to the unique apprenticeship system in Germany, German workers are much better educated than most of their colleagues abroad. Many German workers have professional pride and a good sense of workmanship (Balinski, 2013, Simon, 1996, Simon, 2012).

In Hidden Champions, the leadership style is typically authoritarian on strategic issues, but participative on an operations level. The leaders identify themselves with the company, are focused on their products, and remain for a long time - much longer than is normal in large public corporations. German leaders are rather conservative and don't rush to embrace each new management fashion. This may make them slow, but once they accept an innovation they usually implement it seriously and stick to their plan. They are persistent and long-term oriented (Simon, 1996, Simon, 2012). The top talent in Germany - especially in Hidden Champions - is attracted to the high-tech industry, rather than to consumer goods or financial companies. Germany has nothing equal to Coca-Cola or McDonald's. German Hidden Champions are mostly engaged in value-adding industries, producing many high-perfor-

mance, know-how intensive products (Simon, 1992a, Simon, 2012). The Hidden Champions, as spearheads of German exporters, are know-how intensive and product-focused and combine this focus with global selling and marketing strategies. They think little of diversification, but stick to their core products. The German Hidden Champions integrate technology and marketing effectively (Simon, 1996, Simon, 2012, Buse and Tiwari, 2014).

A serious problem for Hidden Champions, as it is for SMEs in general, is attracting international professionals. Hidden Champions need people who are happy to live in a remote location, who are attracted by the job content, and who do not care much for a formal and prescribed career path. In Germany, the concept of Hidden Champion is known to some extent, and therefore Hidden Champions are able to utilise this label to recruit staff (Simon, 1996, Simon, 1992a). Especially for companies like the case company in this research project, the remote location of the company can be an asset due to the local cultural characteristics discussed in section “4.2.2 - Local and cultural characteristics of the Münsterland region”. Following Simon’s (1996) studies, Hidden Champions are similar across other countries, employing almost identical elements of strategy. Common success factors of these companies are (Simon, 1996, Simon, 1992a, Simon, 2012, Blackburn et al., 2001, Schlepphorst et al., 2016):

1. Setting clear and ambitious goals with an “inner flame” and striving to be the leader in the market.

2. Combining a narrow market focus (niche market) with a global orientation in order to be able to work on an economic scale. Ability to stay focused and concentrated. Ability to avoid distractions.

3. Carrying out their own activities worldwide for sales and marketing, dealing as directly as possible with customers around the globe.

4. Being extremely close to customers in both performance and interaction, which means that all functions have direct customer contacts. Paying close attention to the most demanding customers.

5. Striving for continuous innovation in both product and process with the design of unique products. Innovation is both technology and customer driven. Customer needs are an important driver for innovations.

6. Paying equal attention to internal resources and competencies and external opportunities. Creating competitive advantages in both product and service.

7. Relying on their own strengths. Keeping core competencies in the company, but outsourcing non-core activities. Considering co-operation a last resort rather than a first choice.

8. Always trying to have more work than heads in order to keep the employees focused on the tasks that must be done. Selecting employees rigorously in the first phase, then retaining them for the long term. Communicating directly to motivate people and using employee creativity to its full potential.

9. Practising leadership that is both authoritarian in the fundamentals and participative in the details. Paying utmost attention to the selection of leaders, observing their unity of person and purpose, energy and perseverance, and their ability to inspire others.

Competitive advantages of Hidden Champions are rarely because of cost leadership, and are more because of quality, total cost of ownership, high performance, and consultation that is close to the customer. They "earn" their market leadership through performance and not through price aggression (Kim and Mauborgne, 2015). Their high real net output ratio is often achieved by working with proprietary processes which make it hard for com-

petitors to imitate their products. The model of Schlepphorst (2016) confirmed those distinct features of Hidden Champions that are different from non-Hidden Champions. First, they implement the strategy of product leadership, through which they gain market leadership. Second, the strategy of product leadership is achieved via intensive R&D activities and also via improvement of technological processes. Third, these innovations are purely generated by Hidden Champion employees and not via alliances or other forms of innovation creation. (Schlepphorst et al., 2016)

Hidden Champions are, in general, successful companies - but they are facing the same trends and consequences that SMEs encounter in today's increasingly competitive market places. German Hidden Champions have relatively high production cost which are passed on to their customers. Some companies seem to be overshooting the mark, technologically, and creating products that are too sophisticated and too expensive. Problems can arise through competitors from northern Italy, Asia, and northern Spain, who have introduced less sophisticated and less expensive products. Even with their closeness to the customer, Hidden Champions are low on research on market potentials and trends and the use of marketing instruments. To sustain success, they may have to alter some of their practices, like the need for professional marketing (Koh et al., 2007). Hidden Champions generally develop their own leaders in the context of the Power Culture, which carries with it the problem of the company being heavily dependent on the limited abilities and limited capacities of the leaders for their continued success. Due to demographic developments in the future, it can be a problem to find enough leaders who are technically competent, willing to get their hands dirty, and able to create an atmosphere in which workers are motivated and involved. Finding enough skilled staff is also a challenge, and it is becoming more and more difficult to find young people who will join the company (Simon, 1992b).

In Table 4 - Hidden Champion characteristics, relevant Hidden Champion elements of strategies were summarised as they were further used in this research project. The analysis carried out regarding the Hidden Champion strategic elements and characteristics were done in a group of companies

belonging to SMEs. This procedure implies that the identified Hidden Champion characteristics relate to SME characteristics - which will be demonstrated in the next section of this thesis.

Hidden Champion characteristics
Setting clear and ambitious goals with an “inner flame” and striving to be the leader in the market
Narrow market focus (niche market) with a global orientation
Own activities worldwide for sales and marketing - Deals as directly as possible with customers around the globe
Extremely close to customers in both performance and interaction
Striving for continuous customer driven innovation in both product and process with the design of unique products
Equal attention to internal resources and competencies, and external opportunities
Relying on own strengths
Always trying to have more work than heads to keep the employees focused on the tasks that must be done
Practicing Leadership that is both authoritarian in the fundamentals and participative in the details

Table 4 - Hidden Champion characteristics

(Simon, 1992a, Simon, 2012)

2.4 Characteristics of family businesses

As the case company that will be studied in this research is a family business, it is important to discuss family business characteristics in addition to SME and Hidden Champion characteristics. The family nature of these businesses may have an impact on the understanding of performance and the practice of performance management by members of the organisation. Family businesses are common in most industries, and the latest data provides evidence that family businesses represent a significant organizational form of companies (Andersson et al., 2018). In Germany, for example, 95% of companies are family businesses, they employ 57% of all employees and produce 40% of the GDP (Mertens, 2009). A family business is defined as one in which both ownership and policy-making are dominated by members of an "emotional kinship group ", which results in a number of differences between family and non-family firms e.g. in strategy planning, leadership style, and risk taking (Gallo et al., 2004, Andersson et al., 2018). Some studies on family businesses show that family businesses have less total assets, employment, and sales but carry higher stability and are more profitable compared to private non-family firms, although there exist other studies which show that there are only slight differences between these companies and private non-family firms (Andersson et al., 2018, Machek et al., 2013). Collins and O´Regan analysed the existing literature on family businesses and identified the most important differences between family and non-family businesses as pertains to aspects such as ownership, strategic process, governance, human resources management, and succession. They found that governance and succession represent the commonality in all analysed studies and they stated that succession and governance are solid underpinnings of the family business theory (Collins and O'Regan, 2011). The difference between a family business and a non-family business may depend on the degree and influence of the “familyness” of a particular family company (Astrachan et al., 2002, von Strietencorn, 2013). To explain these differences within the context of family influence, Gomez-Mejia et al. (2007) developed the socioemotional wealth (SEW) model within the family business field (Gómez-Mejía et al., 2007). The authors argued that socioemotional wealth, as a paradigm, is a potential differentiator of family businesses, which could explain why family

firms behave distinctively. Family firms could be motivated by the preservation of their SEW, which refers to the non-financial aspects of the business. Strategic choices and policy decisions are made with consideration to gains or losses in SEW (Berrone et al., 2012). Berrone (2012) proposed five dimensions of SEW which he labelled as FIBER:

- Family control and influence,
- Identification of family members with the firm,
- Binding social ties (social relationships),
- Emotional attachment (role of emotions in the family business context),
- Renewal of family bonds to the firm through dynastic succession (handing the business down to future generations) (Berrone et al., 2012).

In accordance with Gomez-Mejia et al. (2007) and Berrone et al. (2012), performance in family firms is affected by SEW on the level of management processes, firm strategies, corporate governance, stakeholder relationships, and business venturing (Berrone et al., 2012, Gómez-Mejía et al., 2007). Gómez-Mejía et al. (2007) showed that Spanish family-controlled olive oil mills were three times less likely to join a cooperative (a rather lucrative option) than non-family-controlled mills. The inconsistent risk behaviour (risk-willing and risk-averse at the same time) of family firms was explained by their desire to avoid losing SEW (Gómez-Mejía et al., 2007). Kalm and Gomez-Mejia (2016) recently reviewed the existing literature regarding SEW and found that SEW can explain decisions made by family-owners, which may seem unprofessional and might be motivated by preserving their socioemotional wealth (Gómez-Mejía et al., 2007, Kalm and Gomez-Mejia, 2016). Examples of such decisions are compensation, promotion, and succession policies that pertain to family members, and which have little to do with their contribution to the organisation. Here, blood ties are a more important criterion than competence (Martocchio et al., 2011, Martínez-Romero and Rojo-Ramírez, 2016).

However, despite the SEW theory having great acceptance, recent empirical studies do not support the concept of SEW having a positive influence on

family firms nor the deduction that family firms financially outperform non-family firms. Kalm and Gomez-Mejia (2016) hypothesise that SEW may act as a mediating factor and that its consequences and implications for family businesses are unclear (Kalm and Gomez-Mejia, 2016), and Marinez-Romero and Rojo-Ramirez (2016) confirmed that there is no evidence of a positive effect of applying the SEW concept (Martínez-Romero and Rojo-Ramírez, 2016). The majority of family businesses are also SMEs and the strategic paradigm perspectives that are applied to SMEs are equally relevant to family business (Collins and O'Regan, 2011). They also have fewer total assets, less employment, and fewer sales compared to private non-family firms (Mertens, 2009, Andersson et al., 2018). The control activities of family businesses are relatively informal compared to other types of SMEs, but the lack of control is compensated for with a higher degree of trust and communication amongst the owners and managers of the company. The study of Morris et al. (1996) provided evidence that trust and communication in family relationships appear to have the most significant impact on management (Morris et al., 1996).

Family firms represent relatively stable systems as long as the founding entrepreneur remains in place. The decision to bring a family member into a senior position or the founder's decision to disengage can destabilise the company and may cause ambiguity, confusion, and conflict among the family members and employees. The subsequent adaptation process is frequently ill-managed, chaotic, and incomplete (Morris et al., 1996). From a management perspective, families and family members are both a resource and a constraint (Craig and Moores, 2005). Organizational life cycle models support these findings and generally assume that the organisation outgrows the managerial capabilities of the founding entrepreneur, and evolve in such a manner that ownership and management become separated (Greiner, 1972). Morris et al. (1996) and Mertens (2009) argue that only 30% of family firms survive to the second generation of family ownership, and only 15% survive to the third generation (Morris et al., 1996, Mertens, 2009). Recent data regarding the survival rates of newly-founded SMEs show survival rates of 50% within 5 years, 30% within 15 years, and only 12% within 30 years

(Fueglistaller et al., 2013, Eurostat, 2017). The characteristics of family businesses were integrated, especially in the strategy formulation process, and strategic choices and policy decisions were made in light of SEW gains or losses in accordance with the FIBER criteria (Berrone et al., 2012).

2.5 Implications for performance strategy formulation

The literature regarding SME characteristics showed significant differences in SMEs, Hidden Champions and family businesses compared to large companies. As argued before, large companies are more successful in terms of performance than SMEs and family businesses. Hidden Champions, as a sub-group of SMEs, have overcome some of the weaknesses of SMEs, especially in terms of their market position, through focus on a single product or service. Hidden Champions managed to sell a unique customer oriented product or service on a worldwide niche market with direct contact to customers. Porter (1985) called this generic strategic recommendation "differentiation focus" and illustrated it as offering a specialized product or service in a niche market (Porter, 1985). Hidden Champions tends to build strong brand loyalty amongst their customers and have managed to occupy a strong market position in their worldwide markets. A generic strategy advice for a SME, in terms of the design and implementation of Performance Management, is to take the unavoidable weaknesses of SMEs into account while formulating a strategy to improve financial and non-financial performance. The Hidden Champion characteristics support the formulation of a successful company strategy. The degree of “familiness” of a company influences the strategic choices and policy decisions in regard to the socio emotional wealth of a company. In the next sections, the concepts of performance and performance management are reviewed from the literature and a suitable concept of Performance Management for the case company is derived at the end of this chapter.

2.6 Definition of performance

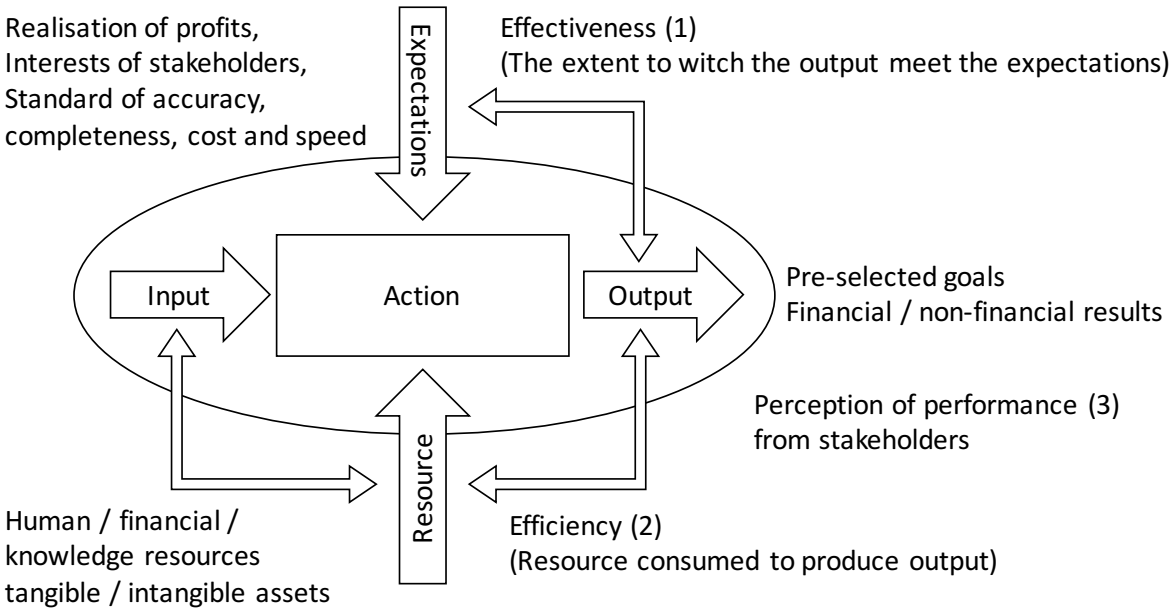


Figure 4 - Concept of performance

(Adapted from (Bititci, 2015, Gray et al., 2015))

Performance, in general, has three meanings, as shown in Figure 4: first, the achievement of results against a set of standards or targets (effectiveness 1), second, the resources invested to produce the intended outcome (efficiency 2). The third meaning relates to a performance piece, e.g. a play, or a piece of music, and how these are perceived (3) by the audience (Gray et al., 2015, Bititci et al., 2005, Bititci, 2015). The perception of performance following the definition of Gray (2015) includes an individual component of evaluation from the audience, or the stakeholders, and represents a wider interpretive perspective of performance. In contrast, Bititci (2015) defines performance in organisations, in a narrow positivist point of view, as the achievement of one or more pre-selected goals measured against pre-set known standards of accuracy (effectiveness 1), completeness, cost and speed under consideration of the consumed input and resources (efficiency 2) (Bititci et al., 2012, Bititci, 2015).

The positivistic definition of Bititci (2015) does not consider the stakeholder expectations represented in the model of performance, nor does it assume

that these are management, or shareholder, expectations. This definition is maybe useful for the goal-oriented management of a company but the interpretivist definition of Gray (2015) enables the integration of the different interests of stakeholders and is much more useful in terms of holistic performance improvement. Due to the qualitative research approach in this study, the definition of Gray (2015) suits more the nature of this study and enables a wider and richer understanding of performance with the integration of different stakeholder interests. Every stakeholder has their own priorities regarding their own interests in the organisation. A financial investor has different priorities and interests than a customer or an employee (Neely et al., 2000, Neely and Jarrar, 2004). Gray (2015) argues that each stakeholder is concerned about the performance of an organisation, but in different ways. To illustrate the different perspectives, Gray (2015) uses the performance of a public hospital as an example. As taxpayers, we are interested in the efficient use of public money, as patients, we value a responsive and effective service, as members of the patient representative group, we are interested in openness and the opportunity to collaborate with the hospital, as suppliers, we are interested in clear service level agreements and prompt payment, as employees, we are more likely to identify a good performance with fair wages, security of employment, and decent working conditions (Gray et al., 2015). Nevertheless, in a privately owned company, the realisation of profits is traditionally the most important goal. This results in the predominant use of lagging financial performance measures in private companies which have some advantages and disadvantages (Bititci et al., 2000, Hankinson, 2000, Matear et al., 2002).

Financial performance can be understood as the process of measuring the results of a company's strategy and operations in monetary terms. These results are reflected in metrics, such as the company's revenue, return on sales, return on investment, its return on assets, and value added. These measures reflect the company development well, but there are several problems associated with the use of these indicators to measure performance (Gräfer, 2001).

The main points of criticism are:

- Short-termism (a focus on short-term financial performance could have a negative impact on long-term profitability)

- Internal focus - in order to compete successfully in a market, it is important that external factors (e.g. customer satisfaction, competitors' actions) are also considered.

- Manipulation of results (to achieve target financial performance, managers may be tempted to manipulate results)

- Not conveying the whole picture (they do not convey the full picture regarding the factors that drive long-term success and maximisation of shareholder wealth, e.g. customer satisfaction, ability to innovate, quality)

- Backward looking (financial performance measures are traditionally backward looking) (Gladen, 2014, Gleich, 2011)

Non-profit organisations, administration and public enterprises often have other goals that are more important than financial goals, including security, providing public services or infrastructure, and the need to express their performance in non-financial performance measures (Bititci, 2015). The concept of performance in private business has also evolved from a mainly financial perspective to a more holistic view, with added elements of non-financial perspectives (Alpkan et al., 2007). The reason for this enhancement of the performance perspective is that financial measures only allow a restricted, and mostly lagging, perspective on only one dimension of performance (Neely, 2008). In today’s globalised world and knowledge economy, company value is no longer driven primarily by physical or tangible assets. Non-financial performance measures are increasingly important for ensuring satisfaction of stakeholder interests and the long-term success of a business. Success and

future value creation depend on the effective measurement and management of these critical non-financial or intangible resources which comprise the intellectual capital of the business (Haines and St-Onge, 2012, Abdolvand et al., 2015, Marrewijk, 2010a, Marrewijk, 2010b).

Reviewing literature on intangible resources, different internal organizational elements can be identified. These include: strategy, culture, climate, management of human resources, knowledge, skills, product and service quality, brand awareness, corporate reputation, relationships, information and data, as well as patents, processes, trust, and an innovative organisational culture (Bititci et al., 2012, Cocca and Alberti, 2010, Taticchi, 2008, Yadav et al., 2013). The often stated problem with non-financial information is that the information is often not accessible in numerical terms as qualitative information and has a limited conclusiveness because of the unclear different interests of the stakeholders providing the information (Marrewijk, 2010b).

The Chartered Global Management Accountants conducted a study in 2010 of its members with the aim to identify relevant internal organizational elements enabling the efficient and effective use of intangible resources for a greater adaptability to the rapidly changing customer preferences and dynamic marketplace factors. The study showed that 75% of respondents agreed that they needed to put more emphasis on measuring and demonstrating the non-financial value of their business (CGMA, 2012). The CGMA developed a tool providing guidance for identifying and designing performance dimensions of non-financial performance - also referred to as the intangible resources, or intellectual capital of an organisation. Intellectual capital includes all non-tangible resources that are attributed to an organisation, and contribute to the delivery of the organisation’s value proposition. Intangible resources can be split into three components: human capital, relational capital, and structural capital (CGMA, 2012).

Human capital includes the skill sets of an organisation's workforce and the depth of expertise and breadth of experience.

Relational capital includes all the relationships that exist between an organisation and any outside person or organisation. These can include customers, intermediaries, employees, suppliers, alliance partners, regulators, pressure groups, communities, creditors, and investors.

Structural capital covers a broad range of vital elements. Foremost among these are usually: (a) the organisation's essential operating processes; (b) how it is structured; (c) its policies, information flows, and content of its databases; (d) its leadership and management style; (e) its culture; and (f) its incentive schemes. Structural capital also can include legally protected intangible resources (CGMA, 2012).

The correspondence of the dimensions of performance with the evaluation of performance is shown in Table 5 - Dimensions and evaluation of performance. These factors correspond with the performance perspectives of the concept of the Balanced Scorecard from Kaplan and Norton (1996), later discussed in this thesis.

The four performance dimensions should be the foundation of the performance definition for a company. The development of this concept is not trivial and relates essentially to the interests of the stakeholders. These interests are prioritised by the general management of a company and are regularly expressed in a company performance strategy that implies the resource allocation and decision making processes, taking into consideration the competitive environment of the company (Alpkan et al., 2007). The company strategy is the place with the greatest visibility and transparency of the performance definition of a company (Schweizer, 2012, Saunila, 2016, Hu et al., 2017).

Dimensions of performance		Evaluation of performance
Financial Dimension (tangible)	Financial capital / assets (Financial perspective)	Efficiency Effectiveness Perception of performance
Non-financial Dimension (non-tangible or intellectual capital)	Human capital (Learning & Growth perspective)	
	Relational capital (Customer perspective)	
	Structural capital (Internal process perspective)	

Table 5 - Dimensions and evaluation of performance

To summarize, performance is a company-unique concept that is expressed in the company strategy on the basis of the interests of the relevant stakeholders (Banchieri et al., 2011, Tan and Smyrnios, 2011). The relevant financial and non-financial dimensions of performance have to be derived from the strategy. Performance is not a one man/women show and must be evaluated regularly on the different organisational levels within a company. Therefore a top-down and bottom-up communication, alignment and evaluation process must be organised in a Performance Management approach, which will be discussed in the next section of the thesis (Bititci, 2015, Bititci et al., 2016).

2.7 Definition of Performance Management

Reviewing the literature, several definitions of Performance Management can be found. Taticci et al. (2012) state in their study that Performance Management can be defined as activity measuring and managing the dimensions of performance in a company with a balanced and dynamic system of resource allocation and decision-making processes, by congregating, and elaborating and analysing relevant information (Taticchi et al., 2012). This is in line with the definition of Kaplan and Norton (1992), who argued that “balanced” means the need to use diverse measures and perspectives that offer a holistic view of the organization, and “dynamic” refers to the need for developing a system that continuously monitors the internal and external environment and reviews objectives and priorities (Kaplan and Norton, 1992). Other definitions focus on the role of the employees regarding Performance Management and state that is an iterative, closed-loop process of identifying, measuring, and developing the performance of individuals and teams, and aligning performance with the strategic goals of the organisation to support the resource allocation and decision-making process, by gathering, elaborating, and analysing information, through continuous adaptation to the changing operating environment (Aguinis, 2009, Smither and London, 2009, Gleich, 2011, Cokins, 2009, Garengo et al., 2005).

The required Performance Management framework is a much-debated problem in business economic literature and is a subject of interest that has been significantly increased in the last years among firms in all industries due to raised competition through increasing globalisation, as we can see in the next chapter. The development and history of Performance Management explains the predominant priority of the financial dimension of performance evaluation present over the past century (Gleich, 2011, Taticchi et al., 2012).

2.7.1 History of Performance Management

The origins of performance measurement lie in double-entry bookkeeping that emerged in the late 13th century and largely remained unchanged until the industrial revolution (Bititci, 2015). Before the industrial revolution, companies were small and their internal complexity was low. The Performance Management focus in organisations was based on individuals performing tasks as part of a group. The dislocation of facilities made direct supervision harder and the efficiency and productivity of the production processes were developed. Performance appraisals in industry were initiated by Robert Owen in the early 1800s (George, 1972). Owen monitored performance at his cotton mills in Scotland using "silent monitors." The monitors were cubes of wood with different colours painted on each visible side. They were displayed above the workstation of each employee. ‘Bad’ behaviour was represented by the colour black; ‘indifferent’ was represented by blue; ‘good’ by yellow; and ‘excellent’ by white. The superintendent was responsible for turning the monitors every day, according to how well or how badly the worker had behaved. A daily note was then made of the conduct of the workers in the ‘books of character’ which were provided for each department in the mills. (Banner and Cooke, 1984, New Lanark Mills, 2017). Starting from the 19th century, the Performance Management field has evolved through a number of phases (Bititci, 2015).

In the Industrial Age, more complex approaches emerged that were typified by mass production models (Miller and Ford, 2014) and the specialisation of labour, mainly driven by the military, public administration, and industrial companies. They all needed a system of monitoring the performance of numerous individuals to ensure a streamlined progress in the organisational hierarchy. During this period, the payment method changed from piecework payment to a wage system and it became necessary to monitor the productivity of employees. In the first decade of the 20th century, Taylor's concept of scientific management and his ideas of the analysis of existing work methods through observation and measurement were advanced by many others, including Henry Ford, using the concept of time and motion studies (Bititci et al., 2012).

Figure 5 - Global trends in industrial systems and PM

The increasing organisational and managerial complexity in companies resulted in power and control being delegated. It also resulted in the distinction between the function of owners and managers with the development of divisional and departmental budgeting. DuPont and General Motors experimented in the early 1920s decentralized divisional structures with profit centres and developed concept of Return on Investment (ROI). Management was now also held responsible for the achievement of budgeted ROI and therefore moved beyond being only focused on measures, such as margin and net income (Bititci et al., 2012). In the 1930s in France, operational performance of organisations was measured with the "tableau de bord" (literal translation = a control panel or dashboard located in front of the driver of a vehicle). The tableau de bord is an information tool for monitoring organizational activities through predefined financial performance indicators (PIs) (Scheibler, 2002, Bourguignon et al., 2004).

The early stage of globalisation during the 1950s led to the development of more sophisticated methods such as quality control, variety reduction and productivity improvements with the emphasis on financial indicators (Bititci et al., 2012). Beginning in the 1960s the economy shifted from seller markets to the demand oriented buyer markets. The dimensions of quality, time, flexibility and customer satisfaction became important aspects in the management of a company (Bititci et al., 2012).

Since the 1970s a lot of instruments were developed with the aim to improve the traditional accounting systems to accurately determine the actual costs of production and the costs of related services like Activity Based Costing (ABC), or Economic Value Added (EVA) (Taticchi et al., 2010). In the 1980s, the Strategic Measurement Analysis and Reporting Technique (SMART), Supportive Performance Measures (SPA), Customer Value Analysis (CVA), Business Excellence Model (BEM), and the Performance, Development, Growth, Benchmarking System (PDGBS), were developed and marked as an important change in performance measurement literature. For the first-time, strategy was linked to operations, using external and internal financial and

non-financial metrics of performance and modelling the company as an integrated structure (Bamberger and Wrona, 2012, KPI-Institute, 2017).

2.7.2 Development of the Balanced Scorecard concept

Taticchi et al. (2012) reviewed recent Performance Management literature (Taticchi et al., 2012). He analysed 6,618 papers from 546 journals since 1970. The most cited journals were: International Journal of Operations and Production Management, Management Science l, European Journal of Operational Research, Strategic Management Journal, and the Harvard Business Review. The most cited framework was the Balanced Scorecard (Kaplan and Norton, 1992). Over the last few years, he found a change in focus from Performance Measurement to a significant growth of Performance Management literature with a strong connection to operations, strategy, organisation, and general management issues (Taticchi et al., 2012, Taticchi et al., 2010).

The evolution from Performance Measurement to Performance Management started in the 1990s. The Performance Measurement literature started to converge with work on strategic planning and control. In their 1992 paper, Kaplan and Norton (1992) introduced the first generation BSC as a performance measurement system with the advantage that this system overcomes the strategic management limitations of the traditional reporting systems, which are based mainly on financial measures (Kaplan and Norton, 1996, Kaplan and Norton, 2001b, Kaplan and Norton, 2001a, Kaplan and Wisner, 2009). This first generation Balanced Scorecard was presented as a tool for measurement of performance, including value-creating activities from an organisation's intangible assets (Kaplan and Johnson, 1987, Kaplan and Norton, 1992). This was done by means of the BSC companies translating their vision and strategy of a business unit into objectives and measures reflecting four perspectives of performance that are able to picture the use and the benefit of their tangible and intangible resources.

These are the tangible resources of finances and assets and the intangible resources of relational, human, and structural capital, as previously defined

in section 2.6 - Definition of performance. The highest point of the BSC framework is financial performance, which essentially reflects the stakeholder exception of efficiency. The aspect of relational capital is expressed in the BSC pertaining to the customer perspective, which also pictures the perception of performance by customers/stakeholders. This is in close connection with an effective and efficient set of business processes (structural capital) in the business unit. At the base of the framework is learning and growth (human capital), which provide the intangible capabilities and infrastructure for a continually evolving value proposition and processes (Krstevski and Mancheski, 2016, Kaplan and Norton, 1992, Kaplan and Norton, 2001b, Kaplan and Norton, 2001a). Kaplan and Norton found causal relationships between the lagging financial measures and performance-driving measures, such as internal process and growth and learning (Kaplan and Norton, 1992, Kaplan and Norton, 1996, Kaplan and Norton, 2001a, Perlman, 2013). Some researchers questioned the unidirectional causal relationships of Kaplan and Norton among the four perspectives. They found that these relationships are interdependent and have bi-directional causality, as shown in the following figure (Norreklit, 2000, Tan et al., 2004).

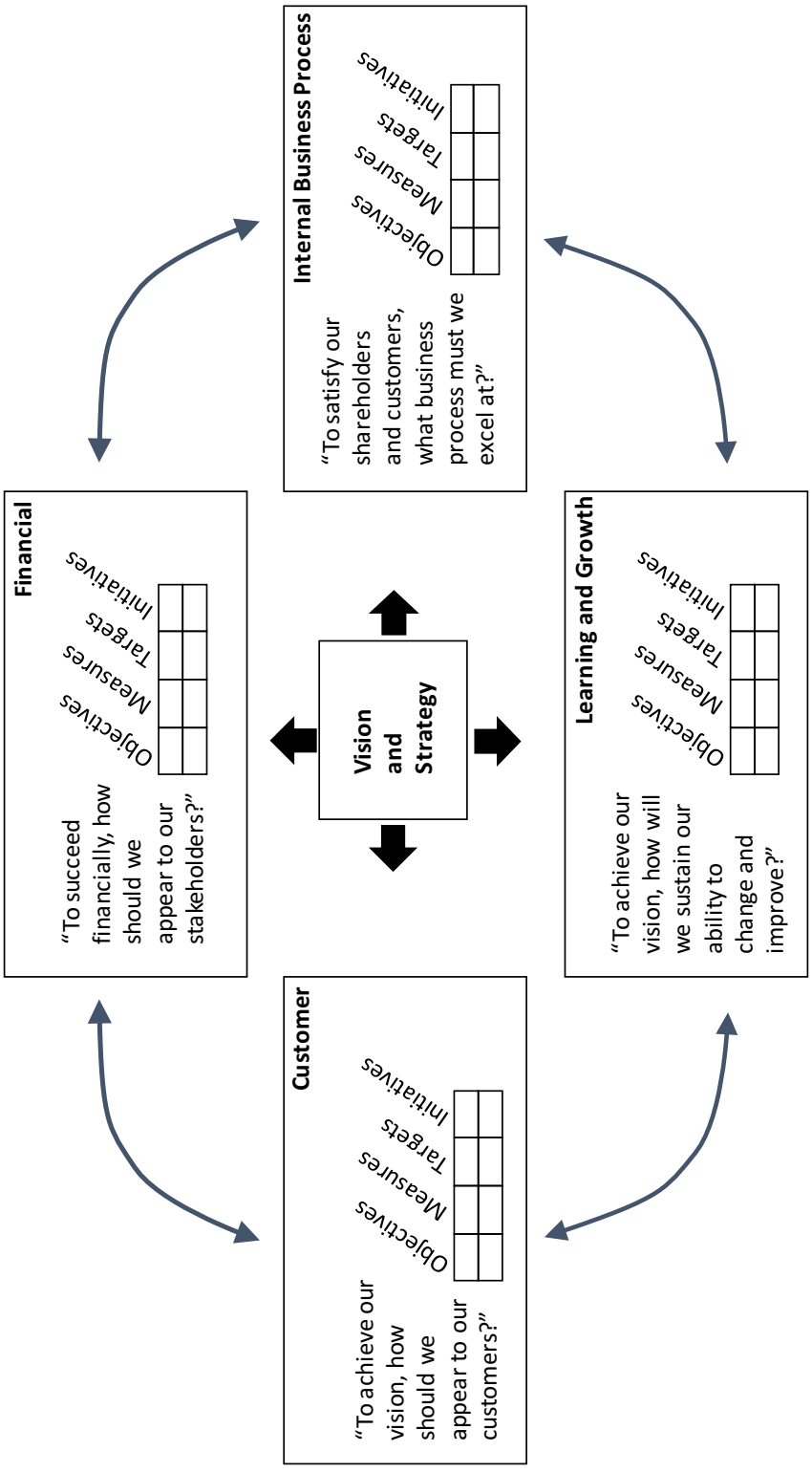


Figure 6 - The balanced scorecard (Kaplan and Norton, 1996)

Akkermans and Oorschot (2005) also analysed these relationships and used a system dynamics approach with causal diagramming to identify relationships between performance measures of the BSC (Akkermans and

Oorschot, 2005). An interesting research of Huang and colleagues (2009) showed that, by understanding causal relationships, an organisation can use non-financial measures to measure and extrapolate financial performance. They found in their research project a positive relationship between the learning and growth perspective, the customer perspective, and the financial perspective. They also found that internal processes mediate the relationship between the learning and growth perspective and the financial perspective (Huang et al., 2009). Patel et al. (2008) used a causal loop model to identify complex relationships between performance measures and how a change in one measure affects the rest of the system (Patel et al., 2008). Wang et al. (2010) analysed the influence of measures from different perspectives, they suggested to look at hierarchical and vertical relationships among the different measures (Wang et al., 2010).

The BSC is a comparatively easy to understand concept that pictures the return of the different tangible and intangible resources of a company or a business unit. It has received significant attention and has been applied to different industries successfully (Kaplan and Norton, 1996, Kaplan and Norton, 2001b, Kaplan and Norton, 2001a, Kaplan and Wisner, 2009). Neely and Adams (2002) analysed the first generation BSC implementations and came to the conclusion that a major BSC weakness is the focus on the owner and the customer and that it ignores the needs of various stakeholder groups. Other stakeholders, such as employees and suppliers, tend to be forgotten. Their model of the Performance Prism emphasises a greater consideration of the relational capital of a company and suggests that, for organisations operating within any industry, the most important aspect of management is to deliver the expectations of their stakeholders (O'Boyle and Hassan, 2013). The Performance Prism approach, therefore, analyses the different interests of all relevant stakeholders and integrates these needs into the company strategy and the derived Performance Measurement system (Neely et al., 2002, Neely et al., 2001). The Performance Prism is displayed in the form of a prism with the following five sides/elements: Stakeholder requirements, Stakeholder contribution, strategy, process, and capability, as shown in the next figure (Bourne and Bourne, 2011, Neely, 2008).

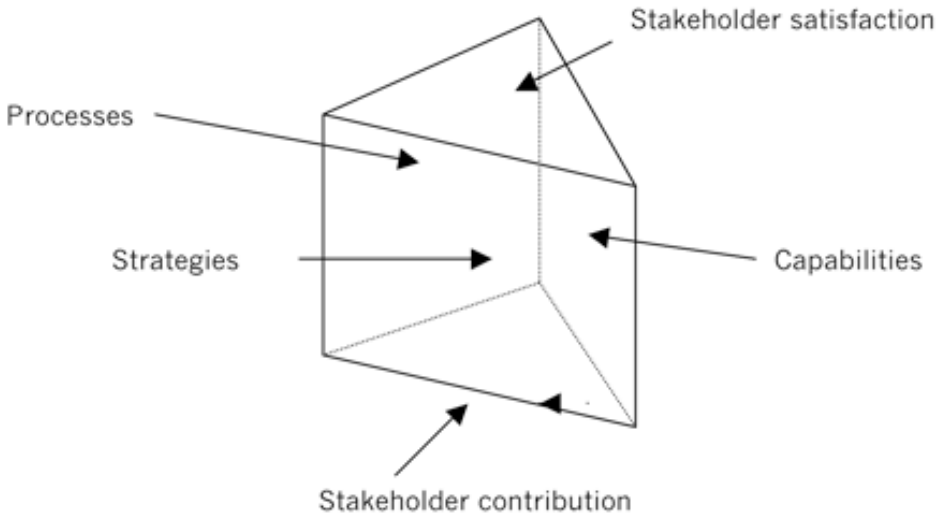


Figure 7 - Performance Prism (Neely et al., 2002)

The idea behind the Performance Prism is the consideration of the contribution of the stakeholder to the organisation (Neely et al., 2002, Cengic and Fazlic, 2008). The Performance Prism is an example of a method developed based on the first generation Balanced Scorecard. The Performance Prism concept has also proven to be successful for some organizations but not enough evidence exists in support of this model being either superior or inferior to the Balanced Scorecard (O'Boyle and Hassan, 2013). Regardless of the critiques made by Neely, the BSC remains one of the most popular and influential methods of measuring and managing performance (O'Boyle and Hassan, 2013).

Kaplan and Norton (1996, 2001, 2004) reviewed the critique regarding their first generation BSC and extended it to a second generation BSC as a strategic management system. This was done through the implementation of strategy maps that are based on a particular collection of critical indicators that link and measure managerial performance with a business strategy. Through the implementation of inductive and deductive cause-and-effect relationships in the strategy maps the BSC evolved from a Performance Measurement System to a strategy-related Performance Management System (Kaplan and

Norton, 1992, Kaplan and Norton, 1996, Kaplan and Norton, 2001a, Hu et al., 2017, Kaplan and Johnson, 1987, Kaplan and Wisner, 2009). In strategy maps, performance indicators are assembled and linked across the four perspectives - financial, customer, internal process, and learning and growth, and provide a balance between short- and long-term objectives, financial, and non-financial measures, and external and internal performance indicators. The development of strategy maps as the causal model of strategy of an organisation as a graphical depiction is a key concept in the second generation BSC (Neely and Bourne, 2000, Kaplan and Norton, 1996, Speckbacher et al., 2003).

Strategy maps essentially “tell the story" of the organisation’s strategy and become the basis for developing the different scorecards with the short-term and long-term objectives of the strategy. Most importantly, the scorecard balances those outcomes, which the organization wants to achieve (typically in the financial and customer perspectives), and the drivers of those outcomes (typically in the internal process and learning and growth perspectives). Detailed cause-and-effect reasoning, depicted in a strategy map, links the drivers of the strategy to the desired financial and customer outcomes that represent the success of the strategy (Kaplan and Norton, 2001b, Friedag and Schmidt, 1999, Josse, 2005, Scheibler, 2002). The balanced, transparent, and strategy-related performance feedback via a BSC system, usually a BSC cockpit, improves managers’ perception and understanding of the actual system state, the targets, and the strategy, with the consequence of better strategy-implementation decision making and higher organizational performance (Hu et al., 2017). Strategy maps improve the understanding of important cause-and-effect relations and decision-making performance, therefore, rises. Evidence for the positive effect of understanding causal relations is supported by empirical research (Hu et al., 2017)

Even though the second generation BSC is not presented as a strategy formulation technique, the emphasis on developing a causal model of the strategy indicates the necessity of having a properly developed strategy before the tools of the BSC are used to map out the implementation of the strategy

(Malmi, 2001, Weber and Schäffer, 2000, von Bouguslawski and Ardelt, 2005). Some researchers argue that despite the importance of the causal model in the BSC, no specific method is available to help organizations to develop it (Speckbacher et al., 2003). Various studies on the adoption of the BSC show that one problem encountered by many organizations is their inability to develop a causal model of their strategy (Malmi, 2001). Malmi (2001) found that the adopters of the BSC in Finland experienced difficulties in developing the causal model of their strategy. Even though the respondents claimed to have developed their performance measures from the cause-effect model of their strategy, they were not able to describe their model very well. Malmi concluded that the claimed link appeared to be weak (Malmi, 2001). A study of BSC adoption in Austria and Germany also found that about half of the companies that adopted the BSC did not develop a causal model of their strategy (Speckbacher et al., 2003). Davis and Albright's (2004) survey of the literature on the BSC shows that 77 percent of companies that adopted the BSC in the USA failed to develop a causal model of their strategy (Davis and Albright, 2004, Weber, 2001).

The Balanced Scorecard is a powerful tool when combined with other methods (ABC, BPM, TQM, CRM). These methods could add value in terms of strategic and operational aspects in the contemporary climate, including, non-financial elements, intangible assets, environmental and social business aspects, or supply-chain-activities (Cengic and Fazlic, 2008, Bititci, 2015). Through the course of time, literature was published by scientists and consultants with the aim of developing models that are conceptual and scientific oriented, these are flexible Performance Management concepts with focus on measurement and management of performance in different contexts. On the other hand, other concepts published by practitioners as environment-sensitive specific Performance Management concepts with a focus on company related performance measurement and management problems. (Lawrie and Cobbold, 2002, Lawrie and Cobbold, 2004, Turner et al., 2005, Taticchi et al., 2008, Taticchi et al., 2012). What can be learned from the literature is that the development of performance measurement and management is a continuous process and needs management attendance, so applying any of

the methods in managing performance measurement and management should be a dynamic, reflective, and proactive managerial task (Biron et al., 2011, Mahmoud, 2011, Sarmiento and Devins, 2013).

2.7.3 Critical reflection of the Balanced Scorecard concept

The literature review shows that Performance Management is an important subject in companies experiencing market and business globalisation, increased customer focus, advances of the ICT, and the turn to the knowledge based economy concurrent with lack of financial resources (Bianchi et al., 2015, Busi and Bititci, 2006). The Balanced Scorecard had been adopted by 44% of organisations worldwide by 2001 (57% in the UK, 46% in the US, and 26% in Germany and Austria). More recent data suggests that 85% of organisations had performance measurement system initiatives underway (Speckbacher et al., 2003, Rigby, 2001, Neely, 2008). In the last 20 years many critiques have been formulated against the first and second generation BSCs and their implementation, for example, a report in Fortune magazine in 1999 concluded, regarding the risks of Performance Management implementations, that less than 10% of organisations' strategies are effectively formulated and executed. The findings of the research project concluded that the costs may outweigh the improvements in organisational performance. Neely and Bourne (2000) come to a similar result and state that 70 per cent of balanced scorecard implementations fail (Neely and Bourne, 2000). The reasons they found for failure were:

- poor design and poor implementation,
- missing inter-relatedness of the key performance indicators (KPIs),
- KPIs are a disparate number of performance measures,
- lack of organizational infrastructure,
- lack of focus (management commitment),
- poor implementation resulting in staff playing “the numbers game”(Neely and Bourne, 2000).

Empirical-based literature underlines these critiques also for the second generation BSC and assumes conceptual and structural shortcomings of the BSC. Linard et al. (2002) assert that the BSC fails to translate company strategy into a coherent set of measures and objectives because it lacks a rigorous methodology for selecting metrics and for establishing the relationship between metrics and firm strategy (Linard et al., 2002, Deem et al., 2010). They argue that the BSC approach does not help one to understand how strategic resource accumulation and depletion processes are triggered by the use of different policy levers affecting performance drivers. The association of performance drivers and the effect on outcome indicators is not clear, neither is the way in which outcomes affect strategic-asset accumulation and depletion processes. It is also not clear how to align key performance measures to strategic objectives (Bianchi et al., 2015).

Hu et al. (2017) did not find a positive effect with regards to strategy implementation performance when comparing an implemented BSC to a traditional financial oriented report system. Although participants preferred the BSC, noting that, compared with other reporting systems, it was less confusing and more clearly designed, their decision making was still not improved (Hu et al., 2017). However, cautionary evidence reported that 8% of 174 companies from German speaking countries decided not to implement a BSC because they could not see advantages or a positive impact, especially given the implementation effort required (Neely, 2008, Speckbacher et al., 2003). Empirical studies have investigated the impact of the BSC approach on performance; for example, Crabtree and DeBusk (2008), and De Geuser et al. (2009). Campell (2008), and Neely (2008) conducted case-based analyses, whereas Capelo and Dias (2009), Lipe and Salterio (2002) and Tayler (2010) started the work on experimental investigations. These studies have shown that Performance Management activities have a positive effect on financial and non-financial organisational performance, which also applies to SMEs, and this is explored in the next section of the thesis (Crabtree and DeBusk, 2008, De Geuser et al., 2009, Campell, 2008, Neely, 2008, Capelo and Dias, 2009, Lipe and Salterio, 2002, Tayler, 2010).

2.8 Performance Management in SMEs and Hidden Champions

The potential positive impact of Performance Management on financial and non-financial performance in SMEs has been studied and proven in the research literature (Garengo et al., 2005, Wiesner et al., 2007, Bititci, 2015, Bititci et al., 2012). The search for literature regarding PM in Hidden Champions brought no results. Literature regarding Hidden Champions does not explicitly discuss the measurement and management of financial and non-financial performance. The information that can be found is that Hidden Champions, in general, are relatively successful companies compared to other SMEs (Simon, 1992a, Simon, 2012). Hidden Champions are a subgroup of SMEs – therefore it can be assumed that the following argumentation of Performance Management in SMEs is also valid for Hidden Champions.

Empirical studies show that there is a link between Performance Management and improved financial and non-financial performance of SMEs (Huselid, 1995, Patterson et al., 1997, Ates, 2013, Bititci et al., 2016, Bititci, 2015, Garengo et al., 2005, Wiesner et al., 2007, Bititci et al., 2012, Santos et al., 2008). Research also showed that SMEs outperform the competition when they link operations to their business strategies, as proposed in Performance Management concepts like the Balanced Scorecard (Hudson et al., 2001b, Oltra and Flor, 2010, Banchieri et al., 2011, Edinburgh Group, 2017, Hu et al., 2017). Further research showed that Performance Management activities can play an important role in supporting managerial development, resource allocation and decision-making processes in SMEs, but this is no guarantee for a positive development of the financial and non-financial performance in SMEs (Garengo et al., 2005, Laihonen et al., 2014).

Garengo et al. (2005) found that Performance Management Systems differ between companies of different sizes and identified factors that influence the PM in SMEs, e.g. lack of financial and human resources, wrong perception of the benefits of PMS implementation, and short-term strategic planning. These results confirm previous findings and suggestions for the need of an SME specific and tailored Performance Management System (Garengo et

al., 2005, Cocca and Alberti, 2010). As argued before, little research was found in the PM literature relating to design and implementation issues of a SME specific Performance Management approach (Sousa and Aspinwall, 2010, Bititci et al., 2012). Most of the published PM literature focuses on large private and public sector organisations. The application of theoretical PM approaches – developed in the context of larger companies - was done in different types of SMEs from different researchers with ambiguous results. Most of these studies were done without the consideration of SME characteristics (Sousa and Aspinwall, 2010, Sousa et al., 2006). Bititci et al. (2012) stated that disregarding SME characteristics and guidance for the implementation of an SME specific and tailored Performance Management approach are the main reasons that SMEs do not implement Performance Management Systems (Bititci et al., 2012).

A review of existing practices of Performance Management approaches in SMEs confirmed the existence of a gap between the importance and use of Performance Management (Sousa and Aspinwall, 2010, Sousa et al., 2006). Sousa and Aspinwall (2006, 2010) conducted studies to determine the current state of knowledge related to Performance Management and the degree of implementation in SMEs in the UK. Results indicate that the SMEs surveyed, recognise the importance of the Performance Management System but their level of use was significantly lower. They found that there is a gap between the theory/knowledge of Performance Management and the practice in UK SMEs. Training of employees and difficulty in defining Performance Management measures and practices were highlighted as the major obstacles to the adoption of Performance Management (Sousa et al., 2006, Sousa and Aspinwall, 2010).

Wiesner et al. (2007) carried out a survey of Australian SMEs on Performance Management practices. The results revealed a moderate implementation of Performance Management practices with low application of participative practices (Wiesner et al., 2007). Garengo and Bititci (2007) conducted a multiple case study to investigate the role of Performance Management Systems (PMS) in SMEs and identified four key factors that influence PMS in

SMEs. Firstly, traditional family firms tend not use quantitative information gathered by formal procedures for their decision-making processes. Secondly, the maturity of the business model used does not fit to the implemented PMS. Changes in the business model do not lead to development of an improved PMS. Thirdly, the study emphasized the key role played by information management practices and employee behaviour, which create a favourable context for the introduction of PMS. And finally, a modern organizational culture and management style favours the adoption of PMS; moreover, in the long run, the use of PMS tends to activate processes of change in a firm's organizational culture and lead to improved managerial practices (Garengo and Bititci, 2007, Churchill and Lewis, 1983, Wisner and Fawcett, 1991). As argued before, the adoption of advanced managerial practices in the main business processes is key to the successful improvement of the business performance and the competitiveness of SMEs (Bititci et al., 2011).

Futher studies in SMEs of Bititci (2006), Garnengo (2009) and Simon (2012) regarding Performance Management came to the result that Performance Management is in the eyes of the owners and managers of the SME, not necessary to get an overview of the business through involvement of the management in day-to-day operations. SMEs have flat organizational structures and flexible, informal processes. This has a direct effect on communication within the organization which tends to be informal. SMEs prioritise operational activities and have a reactive and troubleshooting mentality. SMEs have a fear of bureaucratization and tend to consider their flexibility and ability to react quickly to customer needs as a competitive advantage in comparison to large firms (Bititci et al., 2006, Garengo, 2009, Simon, 2012). Another aspect is, that SMEs face lack of resources which leads to limited IT capabilities and the use of rather simple IT technologies. Measuring and analysing information is difficult due to missing automated data gathering and analysing tools like business intelligence tools. SMEs often need human resources for data gathering and analysis in time-consuming Excel tools with perceived limited benefits (Ates, 2013, Bititci, 2007, Bititci, 2015). External and market information rely on a small number of relations with customers due to their work in niche markets. Their relationships with customers tend to be closer

and on a personal and individual basis. Larger firms regularly conduct market studies and consumer surveys to identify customer demands to improve their products and services. Due to the close relationship of SMEs with their customers, there is a supposed limited need for this quantified information associated with monitoring and managing customers and markets due to lower complexity as compared to larger firms (Ates, 2013, Bititci, 2015, Bititci et al., 2012, Hudson et al., 2001b, Simon, 2012). Most SME and Hidden Champion managers have a family and personal leadership style. Decision-making in SMEs is often focused and pragmatic on daily-business and this is due to the central role of the owners and managers. Employees tend to communicate and solve their problems without relying on measures like complaint rates, failure rates, customer satisfaction rates, etc. Managers are involved in every case, which leads to a lower perceived need for measures and support communication processes (Hudson et al., 2001a, Hudson et al., 2001b). SMEs typically state flexibility, low levels of process standardization, responsiveness, and innovativeness as sources of their competitive advantage - this is true but leads to improvisation, as opposed to organisation, which enables economies of scale. Standardisation is low and products are designed specifically to customer needs. These dynamic strategies and flexible structures promote tactical and context-specific knowledge. This leads to the changing relevance of measures over time and requires dynamic adaptations. Data gathering to create statistics on failure rates or complaints is difficult and time-consuming, and has a perceived limited value due to the low degree of standardisation and comparability (Cokins, 2009). In their 2010 study, Oltra and Flor came to the same result; that the short-term orientation of SMEs and Hidden Champions is likely to result in focusing more on lagging financial measures and less on leading non-financial measures (Oltra and Flor, 2010, Porter, 1996, Tayler, 2010). Sousa and Aspinwall confirmed this finding and found that SMEs, with their constraints in human resources, tend to focus on a few metrics, mainly financial, resource, and operational ones (Sousa and Aspinwall, 2010, Sousa et al., 2006).

At the beginning of this section it was argued that contemporary empirical studies confirm the positive effect of performance management on financial

and non-financial performance in SMEs. Some other studies have analysed the Performance Management implementation and have come to the result that, regardless of the knowledge of the positive effect of Performance Management in the SMEs, implementation rates are low. It was shown that SME characteristics, like lack of resources, lack of managerial skills, prevalent of tacit knowledge, short-termism, flexibility, internal operational focus, and the owner orientation, act as resistance and impede the analysis, design, and implementation of a beneficial Performance Management System in most SMEs. The characteristics of SMEs determine the usage of performance metrics and Performance Management Systems. In their study of PM in SMEs, Sousa and Aspinwall (2010) identified the following barriers to the implementation of advanced managerial tools like Performance Management in SMEs:

SME characteristics	**Barriers to the implementation of advanced managerial practices**
Short-term priorities, flexibility, and less formal procedures	Lack of planning and structure, ineffective procedures, improvisation versus organisation
Internal operational focus and lack of external orientation	Focus on internal processes, ineffective external communication, lack of market knowledge and developments, lack of customer feedback systems
Learning by doing, tacit knowledge	Lack of education and training, underdeveloped measurement of processes
Lack of managerial skills and career development	Lack of leadership style, lack of knowledge, fear / resistance to change
Owner orientation, command, and control culture	Lack of top management commitment for PM, no proper vision, fear of bureaucratisation
Limited resources	Inadequate resources, lack of time, financial and human resources

Table 6 - Barriers to implementation of advanced managerial practices
(Based on (Sousa and Aspinwall, 2010) modified by the author)

Keathly and van Aken (2013) confirmed this result in their study about the role of the management, and concluded that the use of advanced managerial practices, like the way data is acquired, analysed, interpreted, communicated, and acted upon, has an impact on business performance. The intensity of engagement and interaction of general managers and owners of SMEs with the Performance Management process have a positive influence on the results of the Performance Management process (Keathley and Van Aken, 2013). Bäuml (2014) analysed, in his study, the characteristics of SMEs pertaining to the design and implementation of performance management in SMEs, and concluded a mostly negative effect of SME characteristics on Performance Management Systems in SMEs. Bäuml's (2014) conclusion of the impact of SME characteristics is shown in Table 7 - SME characteristics - impact on PM design and implementation:

SME characteristics	**Impact on PMS**	
	Design	**Implementation**
Short-term priorities, flexibility, and less formal procedures	-	-
Internal operational focus and lack of external orientation	o	o
Learning by doing, tacit knowledge	-	-
Lack of managerial skills and career development	-	-
Owner orientation, command and control culture	-	-
Limited resources	+	+

Table 7 - SME characteristics - impact on PM design and implementation

Qualitative assessment +/-/o to indicate positive/negative/no effect following Bäuml 2014 (Bäuml, 2014)

The above table shows that most of the SME characteristics have a negative impact on the design of a PMS and the formulation of adequate measures. And secondly, that the SME characteristics have a negative impact on the implementation and operation of a Performance Management System.

These difficulties for PMS in SMEs must be considered in a tailored PMS approach.

A successful improvement of the financial and non-financial performance in SMEs is possible when the PMS is designed according to the characteristics of SMEs and the SME management attendance is given and sustained (Bianchi et al., 2015, Sousa and Aspinwall, 2010, Sousa et al., 2006). As shown in “2.2 - Characteristics of Small and Medium sized Enterprises (SMEs)“ and discussed in this chapter, SMEs have problems adopting advanced managerial practices and often employ rather simple management techniques. The results of the study of Odar et al. (2012) also confirms that a more holistic system of measurement and management is present in large companies, while less developed systems are used in small companies. Middle-sized companies seem to have more developed management systems than small companies, but less developed ones than large companies (Odar et al., 2012). This suggests why PMS of SMEs are based almost solely on traditional existing lagging financial measures, while large companies have more developed Performance Management Systems and also use some more contemporary techniques like the BSC (Odar et al., 2012). However, as recommended for public and larger-sized organizations, also SMEs also need to focus the design of PM systems on a multidimensional and stakeholder-oriented perspective of performance that captures both financial and non-financial measures to achieve full potential (Bianchi et al., 2015, Neely, 2008).

To summarise: SMEs benefit from tailored PM systems, taking into account SME characteristics. The role of the SME management in this process is crucial for the design and successful implementation of PM. A well formulated and suitable company strategy, operationalised through strategy maps showing cause and effect relationships with clear financial and non-financial performance measures and key performance indicators is important (Najmi et al., 2005, Nudurupati and Bititci, 2005, Sale and Sale, 2005, Wouters and Sportel, 2005, Bititci et al., 2006).

2.9 Discussion of Performance Management approaches for SMEs

The discussed obstacles in SMEs impede the design and implementation of a PMS in a SME. A PMS can fundamentally be designed and implemented following a deductive or inductive approach (Sousa and Aspinwall, 2010). A deductive developed PMS is based on a clearly defined and formulated strategy of a SME reducing and narrowing all activities in the company with adequate measures. This is the way in which most large organisations design their company strategy, following results of market studies and customer surveys (Hu et al., 2017, Porter, 1996, Tayler, 2010). Bititci et al. (2000) tried to develop and adapt a brief deductive implementation strategy for a PMS in SMEs:

Step / Procedure	Conditions
1. Development of a company strategy	Strategy anticipating future developments / SME characteristics
2. Development of strategy maps	Participative development of the causal models (strategy maps) under consideration SME characteristics
3. Development of Balanced Scorecards	Tailored SME implementation design incl. participation of general management

Table 8 - Brief Implementation strategy of PM in SMEs and HCs
(Bititci, 2015)

The literature review shows that most published PMS concepts for the implementation of a Performance Management System are based on a deductive way of thinking (Sousa and Aspinwall, 2010). A deductive Performance Management approach, in general, enables an organisation to act as one towards a common predefined purpose. This procedure provides a tool for the measurement and management of the fulfilment of strategic objectives and priorities in order to link strategy to actions, use operational feedback and external intelligence to shape goals and strategies, as well as facilitate internal and external communication to engage people and external stakeholders in the conversation about the performance of the organisation. The best known

deductively constructed Performance Management Frameworks (PMF) is Kaplan and Norton's (1992, 1996) BSC - it seems to be the most influential and dominant concept in the field of Performance Management. Although the principles behind the BSC are simple, applying them is difficult for SMEs. A deductive PMS approach, like the BSC, implies that performance measures are derived from the company's vision and mission without considering that SMEs have problems with concepts like mission and vision. The design and implementation of a deductive PMS is exceedingly resource consuming and does not add value to customers by itself. This also binds resources for the gathering and analysis of data prior to strategy development, which is mostly not available in SMEs (Sarmiento and Devins, 2013).

To reduce the complexity and potential problems related to a deductive PMS approach for SMEs, an inductive framework for the design and implementation of a PMS in SMEs was proposed by several authors (Sousa and Aspinwall, 2010, Saunila, 2016, Mohammad and Alaskari, 2014, Choong, 2013, Saunila, 2017). An inductive development of a PMS (bottom-up) considers internal and external uncertainty through the development of a PMS that is based on limited internal resources and partial external information, e.g. of the market and customers, as is mostly the case in SMEs. This approach entails that a continuous improvement, innovation, and change are implemented trough a cycle of thinking, acting, reflecting, and learning together (Bititci, 2015, Pekkola et al., 2016). The overall objective of a PMS in an SME is to improve its financial and non-financial performance and therefore it is important that the PMS gives short-term return on investment and quick wins to maintain the momentum and enthusiasm of the development and implementation team in the SME. It should also provide leverage to increase the efficiency in the SME in the short-term without compromising long-term objectives. SME management is interested in the adoption of a PMS to contribute to the goals of the organisation and to drive improvement (i.e. the PMS is not an end in itself)(Bourne et al., 2005). An inductive PMS should have regard to the dynamic environment and must be dynamic and flexible enough to accommodate necessary changes. A PMS for SMEs should be very resource effective, and easy to design and implement due to

lack of resources, including finances, time, and skilled employees. The PMS should consider relevant internal factors and build on SME specific measures for the improvement of financial and non-financial performance. Inductively designed Performance Management Systems in SMEs should, therefore, be organised around business processes and value streams that reflect the workflow through the organisation in order to engage people in a conversation about the performance of the organisation. For this reason, performance measures, scorecards, and dashboards should be displayed and public, so that people can interact and contribute in order to give control over the parameters that are critical to the business (Pekkola and Ukko, 2016, Yadav et al., 2013). Business processes are understood and controlled with process related measures on all managerial levels, and the collective use of these different measures of the business processes gives control over what is happening in the organisation. (Sousa and Aspinwall, 2010, Engle et al., 2015). This leads to the desired improvement of the performance of the SME based on a cultural change of the command and control approach in SMEs, the short-term orientation, and the continuous development of managerial practices. A PMS in a SME helps to identify the needs for internal change proactively and manage change effectively, as opposed to change that is imposed by external factors like customer complaints or changes in legislation (Ates, 2013, Kagaari et al., 2010). Cocca and Alberti (2010) had the same experience in implementing Performance Management Systems in SMEs and proposed a SME specific framework of most important elements, divided into “performance measure characteristics” and “PMS design requirements”, which should be considered as "best practices" for PMS in SMEs. These are summarised in the following table (Cocca and Alberti, 2010):

Performance measures characteristics:	PMS design requirements:
- Derived from strategy. - Link operations to strategic goals. - Simple to understand and use. - Clearly defined/explicit purpose. - Stimulate continuous improvement/right behaviour. - Relevant and easy to maintain. - Provide fast, accurate feedback. - Balanced/multidimensional picture of business. - Monitoring past performance. - Planning future performance. - All stakeholders considered. - Promote integration. - Defined formula and source of data.	- Evaluation/audit existing PMS. - Strategic objectives identification. - Top management support / commitment. - Key users/employee involvement/support. - Facilitator. - Maintenance structure. - Targets/benchmarks setting. - Timescales setting. - A responsible for the measure. - Performance monitoring process. - Alarm signal/corrective actions. - Double-loop learning/challenge strategy. - Relationships between measures. - Linking performance to compensation process. - Procedures defined. - IT infrastructure support.

Table 9 - Best practice PMS characteristics / requirements
(Cocca and Alberti, 2010)

This analysis is helpful for the definition of performance measures and the identification of PM design elements, but does not comprise a procedure for PMS implementation and improvement in a SME. Sousa and Aspinwall developed an inductive PMS framework for SMEs comprised of a set of generic steps based on various improvement frameworks and self-assessment methods (Sousa and Aspinwall, 2010). They describe the PMS implementation strategy as follows:

Steps of implementation	Description of the steps
Initial step / analysis	Knowledge on performance measurement, presentation of initial situation and maturity, awareness, motivation, and retaining commitment
Define and communicate vision, mission, and strategy	Development of a vision, mission, future developments, identification of stakeholders, identification of objectives as enablers and results
Identify initial/current state	Manager describe the current state of the SME but does not have facts to confirm it, identification of relevant external data like business sector, region etc.
Define and prioritise objectives	Definition of a set of objectives that management provides organisational guidance based on prior steps, link objectives to processes, prioritise objectives due to lack of resources, strategy maps can be built linking the most important objectives to identify possible interactions.
Develop a PMS	PMS design based on the information gathered in previous steps depending on the characteristics of the organisation and monitoring of certain variables associated with objectives.
Plan implementation	Development of knowledge, improvement plan, evolution of objectives, performance measurement records
Implement actions - use phase of the PMS	Most important step which will result in success or failure, objectives should be clear and aligned with actions, moving towards fact-based decision making
Review, standardise and learn - review phase	Dissemination of the results throughout the organisation, actions may be taken to ensure that the achieved gains are maintained, through standardisation, learn how to deal with changes and to adapt to their objectives and environment.

Table 10 - Performance Management Framework

(Sousa and Aspinwall, 2010)

Other authors focus on the fundamental principal of the intended iteration of a SME specific inductive PMS which has to be an essential part of the implementation procedure. Once a brief strategy is formulated, objectives are derived, planed, and implemented in the company, the success is checked and the results are acted upon, then the cycle begins from the beginning. Executing the cycle again extends the knowledge and understanding of the process of Performance Management and strategy implementation and improves the effectiveness of the implemented PMS (Najmi et al., 2005, Hall, 2006, Armstrong, 2007, Kotter, 2014, Kaplan and Norton, 1996, Sarmiento and Devins, 2013, Busi and Bititci, 2006).

In Table 11 - Implementation strategy of PM in SME the “Business transformation roadmap” of Bititci (2007), the “Performance Management System” of Bourne and Bourne (2011) and the “Generic managerial activities in the PM process” of Ates (2013); three influential concepts and approaches of the implementation of Performance Management are compared in order of the iterative four step generic PDCA circle of Edward Deming (Saier, 2017).

	Business transformation roadmap (Bititci, 2007)	**Performance Management System** (Bourne and Bourne, 2011)	**Generic managerial activities in the PM process** (Ates, 2013)
Plan	Sort out leadership team Understand and define value streams Define process owner for value streams Develop strategy for each value stream	Development of strategy, objectives, clarification, and selection Definition of organisations success strategy map Prioritise objectives	Develop vison, mission, and values Develop business goals and objectives Develop business action plans Develop KPI Plan resource requirements Identify external factors that impact on business Plan short term activities Plan short term performance targets Plan change programs
Do	Develop Performance Measurement System Define process owner and teams Develop processes Provide necessary systems and resources	Data collection, data analysis Set targets Action plan design Action plan implementation	Communicate company's performance, change, strategic objectives, Implement action plans, change programs Train Invest Communicate with suppliers, customers, and competitors Interact with trade unions

	Business transformation roadmap (Bititci, 2007)	**Performance Management System** (Bourne and Bourne, 2011)	**Generic managerial activities in the PM process** (Ates, 2013)
Check	(Evaluate performance measures) *	Evaluation Review stakeholder expectations	Check staff performance, financial performance, KPIs Monitor supplier, customer, competitor, macro environment
Act	Continuously review progress against aggressive timescale	(Improve performance measures) *	Review business goals and objectives, vision, mission, values, business action plans, KPIs Revise business measures Define improvement activities Feedback Reward

*(Additions by the author)

Table 11 - Implementation strategy of PM in SMEs
(Ates, 2013, Bititci, 2007, Bourne and Bourne, 2011)

Ates (2013) has the most comprehensive collection of measures and found some key areas of intervention in his research project. He identified “planning” as the most crucial phase in the closed-loop process of implementing performance management due to the reason that SMEs have difficulties developing effective missions, visions, values, and strategies. Atest (2013) picks up on this point in his concept without forcing SMEs to use the same tools as large organisations. He also argues that SMEs should develop their managerial practice through improved internal and external communication and tackle the traditional command and control management style.

The compared concepts match in their formulation that SMEs need to change their management style towards empowered and information-based leadership. Continuous development of managerial practices is important with the clear knowledge that it is difficult to change that behaviour in the short term and Performance Management can support this long-term change. The change process of the implementation of Performance Management must be managed effectively through careful planning and communication of the internal and external change initiatives, with the involvement of relevant stakeholders, particularly the soft aspects of change. It must be seen with a strategic and long-term view rather than seeing it as project management (Ates, 2013, Pfeifer et al., 2005).

2.10 Framework for PMS in SMEs and Hidden Champions

As argued before, there is a difference between the knowledge about PMS, their potential benefit for a SME and their implementation rates in SME. In section “2.2 - Characteristics of Small and Medium sized Enterprises (SMEs)“, it was shown that SMEs seem to be more focused on internal and short-term planning, whereas they spend less effort in processing a long-term view on internal and external issues, such as communication, competition, sustainable competitive advantage, strategic market positioning, and horizon scanning. Most SMEs have never formalised their strategies and need support in developing an effective mission, vision, and values.

The developed Performance Management concept used in this thesis consists of a tailored SME and Hidden Champion specific Performance Management design and implementation approach. The developed framework for the design and implementation of the Performance Management System is based on the business transformation roadmap of Bititci, 2007, the Performance Management Framwork of Sousa and Aspinwall, 2010, the Performance Management System of Bourne and Bourne, 2011, and the Generic managerial activities in the PM Process of Ates, 2013. It is formulated as an

iterative loop following the Deming PDCA circle and the action research approach that will be used as research design and methodology in this research project, will be elaborated in the next chapter of this thesis.

Steps of implementation	**Description of the steps**	**Activities**
Identify initial/current state **(Definition)**	Manager describes the current state of the SME but does not have facts to confirm it, identification of relevant external data like business sector, region etc.	Identify external factors that impact on business Identify stakeholder and process owner for value streams
Initial step / analysis of initial situation **(Definition)**	Knowledge on performance measurement, presentation of initial situation and maturity, awareness, motivation, and retaining commitment	Understand and define value streams Evaluate used performance measures Train management team in performance management
Define and communicate vision, mission, and strategy **(Planning)**	Development of a vision, mission, future developments, identification of stakeholders, identification of objectives as enablers and results	Develop strategy for SME Develop and prioritise objectives for each value stream Definition of strategy map
Define and prioritise objectives **(Planning)**	Definition of a set of objectives that management provides organisational guidance based on prior steps, link objectives to processes, prioritise objectives due to lack of resources, strategy maps can be built linking the most important objectives to identify possible interactions.	Develop business action plans incl. resource requirements Develop KPI Plan short term activities and performance targets

Steps of implementation	Description of the steps	Activities
Develop a PMS **(Implementation)**	PMS design on the information gathered in previous steps depending on the characteristics of the organisation and monitoring of certain variables associated with objectives.	Data collection Data analysis Set targets Action plan design Action plan implementation
Plan implementation **(Implementation)**	Development of knowledge, improvement plan, evolution of objectives, performance measurement records	Communicate company's performance, change, strategic objectives Implement action plans, change programs Train Invest Communicate with suppliers, customers, and competitors Interact trade unions
Implement actions - use phase of the PMS **(Implementation)**	Most important step which will result in success or failure, objectives should be clear and aligned with actions, moving towards fact-based decision making	Check staff performance, financial and non-financial performance, KPIs Monitor supplier, customer, competitor, macro environment
Review, standardise and learn - review phase **(Analysing and reviewing)**	review progress / dissemination of the results throughout the organisation, actions may be taken to ensure that the achieved gains are maintained, through standardisation, learn how to deal with changes and to adapt to their objectives and environment.	Review stakeholder expectations, strategy, business goals and objectives, values, action plans, Revise KPIs, measures Define improvement activities Feedback Reward

Table 12 - Implementation of a PMS in SMEs and Hidden Champions

2.11 Strategy map for performance of SMEs and HCs

The concept of performance is a company individual concept that is influenced by the interests of the stakeholders and expressed in the strategy of a company (see section “2.6 - Definition of performance”). The relevant financial and non-financial dimensions of performance have to be derived from the company strategy, which should be developed on the basis of the interests of relevant stakeholders. Nevertheless, a generic SME and Hidden Champion strategy was formulated in the course of this research project on the basis of the identified SME and Hidden Champion characteristics. This generic strategy maps needs further discussion with customers, suppliers, business partners, shareholders, employees, and other relevant stakeholders to adapt presumed stakeholder interests. Financial performance can be displayed in traditionally used financial indicators of financial stability and profitability. Gräfer (2001) proposes an analysis tool for the balance sheet analysis of SMEs and defines over 30 financial indicators for the analysis of financial performance of a SME. The following four indicators were selected by Gräfer to perform a quick check of the financial stability and profitability of a SME.

Analysis section		Indicator	Calculation	Target
financial stability	financing (capital strength)	equity capital ratio	= equity capital / total capital	> 30%
	liquidity (indebtedness)	debt amortisation period in years	= (external capital - liquid assets) / cashflow	< 3 years
profitability	profitability (rate of return)	return on total capital	= (Earnings before tax + borrowing costs) / total capital)	> 15%
	income ratio (financial performance)	cashflow performance ratio	= cashflow / operating performance	> 10%

Table 13 - Quick check of financial performance of a SME (Gräfer, 2001)

Hudson, in 2001, evaluated PMS in the literature and identified dimensions of financial and non-financial performance for which measures should be developed (Hudson et al., 2001b). He found that time, quality, and flexibility are commonly cited as the main operational dimensions that should be measured. Finance, in various different forms, is also considered to be a critical dimension of performance. In addition, customer satisfaction and human resources are repeatedly cited as critical measurement areas.

Operational Performance Measures			**Critical dimensions**		
Quality	Time	Flexibility	Finance	Customer satisfaction	Human resources

Table 14 - Six general performance dimensions (Hudson et al., 2001b)

These six dimensions can be seen to cover all aspects of a business on a concept level: the financial results, the operating performance (through the dimensions of time, quality, and flexibility), the way the company is perceived externally (through its customers), and the cultural aspects of the working environment (through the human resource dimension). However, according to Hudson et al., these dimensions are not prescriptive, but are intended to be considered when developing company individual measures (Hudson et al., 2001b). Effective Performance Management of an organisation should manage its value streams and business processes on the operational level and optimise performance of each value stream (Bititci, 2015, Gawankar et al., 2015, Pekkola, 2013). The following figure shows a generic model of business processes in a SME:

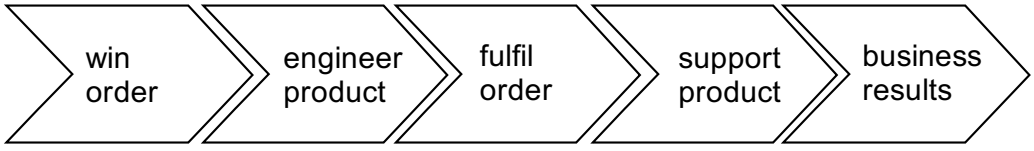


Figure 8 - Value stream in a company (Bititci, 2015)

The design of a specific Performance Management System must be owned and understood by the senior management team, each member of the team will have their unique perspective based on their experience and their views on how things should run (Bourne and Bourne, 2011, Nudurupati et al., 2016, Sihler et al., 2004).

Taking into account the preliminary considerations and the results of the literature review, a generic strategy map was briefly prepared by the researcher on the basis of SME and Hidden Champion characteristics. The chosen methodology for the research project was Action Research - which will be the subject of chapter 3 - Research Design and Methodology. This implies a participative approach and leads to cooperative research activities, which include workshops with the participants. The idea behind the strategy map was to shift the focus on the positive (supporting) and negative (limiting) characteristics of a SME and Hidden Champion. A positive financial and non-financial performance development should be likely if a company weakens or avoids the limiting characteristics and forces the supporting SME and HC characteristics.

The different SME and HC characteristics were assessed pertaining to their best fit to the five BSC perspectives. The basic BSC perspectives (grey boxes in Figure 9 - Generic strategy map for Hidden Champions and SMEs) were proposed by Kaplan and Norton (Kaplan and Norton, 1992, Kaplan and Norton, 1996, Kaplan and Norton, 2001b, Kaplan and Wisner, 2009). The SME and HC characteristics of “clear cut and competitive strategies”, “clear and ambitious goals”, “external orientation of strategy”, “unique products and 1-product-strategy”, and “leadership authoritarian and participative” were added to the BSC perspective of “strategy and leadership perspective”. These aspects aim to formulate a competitive and differentiating company strategy.

The SME and HC characteristics of “more work than heads”, “own finances”, and “quality, service and innovation leadership” address the cost and value of products and services and, hence, relate to the financial perspective of the

BSC. Furthermore, the characteristics of “global focus”, “worldwide own sales activities”, “extreme closeness”, “focus on most demanding customer”, and “niche markets” were identified as elements that influence the relationship of the company to the customer and are grouped under the “customer and market perspective” of the BSC. The characteristics of “continuous improvement and innovation,” “less formal procedures and flexibility”, and the “high integration of processes” were added to the BSC, due to the fact that these aspects relate to the process design in the company. The characteristics “high qualified employees”,”loyality of employees”, “internal qualified resources”, “leadership style”, and “learning by doing (tacit knowledge)” were assigned to the “capability and growth perspective” of the BSC because they address the human resource aspect of the company.

The proposed strategy map is shown in Figure 9 - Generic strategy map for Hidden Champions and SMEs. With this generic strategy map, a SME and Hidden Champion should be able to implement a PMS more rapidly, as basic decisions are made to focus on strategic performance priorities (Krstevski and Mancheski, 2016).

The SME and HC characteristics were derived from a variety of different SMEs and HCs from various industry sectors. An interesting point to consider is the question of whether or not there are some strategic aspects that are more important than others and if there are any relationships between the characteristics. Kaplan and Norton identified, from a bird’s eye perspective, the positive effect of strengthening dimensions of financial and non-financial (relational, process, human) capital in a company. They proposed an abstract instrument that has to be filled with a company’s individual priorities. The process of strategy development and operationalisation with a strategy map is an integral part of the BSC development to ensure sustainable effectiveness, and there is, therefore, no general answer regarding the strategic priorities for a specific company. The different effects of the aspects of the strategy map were discussed in the case company through an analysis of which of the characteristics were felt to be strengths, weaknesses, or opportunities for improvement.

Figure 9 - Generic strategy map for Hidden Champions and SMEs

2.12 Summary: Performance management in Hidden Champions

The literature review shows that the implementation of a Performance Management System has positive effects on the development of SMEs and Hidden Champions. During the development of concepts like performance and Performance Management, the significance of financial indicators decreased in favour of non-financial performance indicators. The main reasons for that were the increased importance of intangible assets in the developing knowledge economy and the increased importance of stakeholder perception of performance with the rising competition in developed economies. The most implemented and well-known concept of Performance Management is the Balanced Scorecard (BSC) of Kaplan and Norton (1990, 1996). Their second generation BSC responded to the critics of the first version and integrates strategy maps and the HR perspective on performance. Other important concepts, like the performance prism of Neely and Adam (2002), enhance the BSC through an intensified stakeholder orientation, but has never received as much importance as the BSC. The literature review led to the following SME and Hidden Champion tailored approach of PM implementation shown in Table 12 - Implementation of a PMS in SMEs and Hidden Champions which was used in this study. The particular characteristic of this procedure is a participative and inductive approach which leads to acceptance and motivation for the implementation. This procedure includes the participative development of a company strategy with deducted strategy maps in the form of a graphical illustration of the causal model of the company strategy. The proposed generic strategy map for a Hidden Champion is shown in Figure 9 - Generic strategy map for Hidden Champions and SMEs. This leads to the development of effective scorecards with short-term and long-term objectives and KPIs of the company strategy at the operational level.

3 Research Design and Methodology

3.1 Introduction

This chapter discusses and justifies the use of an interpretive research paradigm and Action Research Design in this project. The results of the literature review on performance, Performance Management, SMEs, and Hidden Champions point to the usefulness of an interpretive research paradigm and a research design and methodology, along with the advantages of the integration, or better participation, of the owner, managers of companies, and employees of Hidden Champion who are taking part in the research. The participation of the practitioners enables the selection of a relevant research subject, a practice and theory-oriented research design, and a cooperative realisation of the research project that is based on the interests and motivation of the participants with a high interest in the results of the research project. This can be done using Action Research-based case study design, which involves practitioners in the research process. Action Research is an interpretive, pragmatic framework of multi-method research in cooperation with the research participants. The validity of generated knowledge is tested in action. Existing definitions of Action Research in the literature are presented in section “3.5 Action Research” and the subsequent characteristics and features of Action Research are highlighted. The various ways of defining and understanding Action Research are discussed. The research paradigm, the epistemological and methodological basis of the research approach, and applied methods are also discussed in this chapter, including the generic stance of the researcher and the understanding of the project. The choice, origin, and justification of Research design are presented, as well as the data collection strategy, including the choice of research tools that were employed at each phase of the research project. The analysis strategy, including the use of multi-method analysis, is also explained.

3.2 Definition of Action Research

Stringer (2014) defines Action Research as a qualitative systematic methodological research approach for carrying out collaborative research with or by insiders, practitioners, and stakeholders using an interpretive point of view (Stringer, 2014). Action research focuses on the problem, or issue, to be investigated and enables people to understand the nature of problems or phenomena in order to find effective solutions to problems they confront in their everyday lives. It is research in action, rather than research about action (Stringer, 2014). According to Reason (2006), Action Research is a participatory, democratic process concerned with developing practical knowing and the pursuit of worthwhile human purposes, grounded in a participatory worldview (Reason, 2006). Herr and Anderson (2015) define Action Research as an interactive inquiry process that balances problem solving actions, implemented in a collaborative context, with data-driven collaborative analysis, or research, in order to understand the underlying causes enabling future predictions about personal and organizational change. Action Research comprises a qualitative systematic sequence of iterative cycles, consisting of gathering data collaboratively, jointly analysing the data, jointly planning action, taking joint action, and joint evaluation. “Joint”, in this context, means the intensive cooperation with research participants in every phase of the research, which is essential for an Action Research Design. Action research works through a cyclical four-step process of consciously and deliberately: a) planning, b) taking action, c) evaluating the action, d) leading to further planning, and so on (Herr and Anderson, 2015). While the definition put forward by Reason (2006) focuses on the benefit of Action Research using participative research design, Stringer’s (2014), and Herr and Anderson’s (2015) definitions are more focused on the process of doing Action Research. The common idea of Action Research is to study the resolution of important social or organisational issues together with those who experience these issues directly, to focus on relevant research subjects, and to ensure the application of findings into practice while contributing to the practical and theoretical scientific knowledge base. An interesting and relevant aspect, especially for the recent research project, is the claim of action researchers that

Action Research is more effective while problem solving and generating scientific knowledge are done simultaneously (Small and Uttal, 2005).

An important difference of Action Research (AR), in comparison to traditional positivist research methods, is that the focus of control shifts with varying degrees from the professional researcher to the so-called traditional subjects of research. Such participation contrasts with traditional research, where members of the system are subjects or objects of the study. Members of the system that is being studied participate actively in the cyclical process outlined above. AR designs differ in the qualitative element of how people participate in the chosen research focus, and how they engage in the process of action and inquiry in order to co-generate knowledge (Herr and Anderson, 2015). A necessary condition for participation is individual concern and that the perceived need for change comes from within the setting, for example, the requirements of the organisation for the intended change. Another important difference is the generation of local knowledge that is fed back into the setting, for example, the knowledge of the managers of an organisation through making implicit knowledge explicit. The desired outcomes of the Action Research approach are not just solutions to the practical issues, but are also important in learning from outcomes, both intended and unintended, and provide a contribution to actionable knowledge: that is, knowledge which is useful for practitioners and robust for scholars. The generation of substantial practical and robust theoretical contribution is the overarching objective of this research project.

The next section discusses the individual concerns of the different stakeholders, the perceived need for change from within the Hidden Champion, and the motivation of the researcher in the research project.

3.3 Motivation of the company and the researcher

The subject of the research project is the improvement of financial and non-financial performance of an SME and Hidden Champion. The area of research was initially based on the motivation of the researcher mainly working as a management consultant for SMEs and Hidden Champions in Germany. To shape the area of research, a pilot study was performed in an SME and in Hidden Champions over the course of the DBA programme at the University of Bradford, which began in 2010. The gap of theoretical knowledge was identified and justified through literature review of the existing literature on SMEs, Hidden Champions, and the use of Performance Management in SMEs and Hidden Champions. An idea for a research project with a participative design was developed and presented. In the next step a Hidden Champion, that was suitable for the research project, was identified in order to conduct an in-depth longitudinal Action Research case study with the aim to design and implement a tailored Performance Management approach in the Hidden Champion. As argued before, it is important that the formulated research objectives reflect the motivation of the involved company to improve its financial and non-financial performance and also the motivation of the researcher to address the theoretical gap of performance management design and implementation in SMEs and Hidden Champions. The research objectives were developed in a cooperative process between the researcher, the proposed Hidden Champion, and the researcher's University supervisor. The following criteria/interests were formulated by the different stakeholders of the research project:

- The usefulness of the findings of the research project was a major concern for all stakeholders of the research project. This was ensured through performing a case study in Action Research Design, working on an actual issue of an SME based on a knowledge gap in the literature. The results and findings had to prove practicality and usability in a field test by involved practitioners, as well as providing a theoretical contribution to the literature.

- The interpretation of performance and Performance Management depends on the evaluation of the different stakeholders and is specific for a company. The development of financial and non-financial performance should be based on an interpretive empirical design of the research project. Working on performance should be organised as an explorative participative process with the participants including design, data collection, analysis, deriving of measures, and evaluation.

- The intended change in the company to achieve higher performance is vital, while co-working on the research objectives, and should allow the researcher to be part of the process as a process facilitator. The chosen Hidden Champion exemplifies the development and implementation of a validated Performance Management approach for other SMEs and Hidden Champions.

- The data collection strategy must ensure the collection of qualitative, quantitative processual and behavioural data. Data triangulation should be possible through multiple data sources. The improvement of company performance should be observed over a longer period (ca. 18 month) to ensure correct data without seasonal effects or delayed invoicing for longer lasting projects.

These criteria/interests were considered for the development of an interpretive and explorative qualitative research design that allows the achievement of the research objectives and the contribution to theory and practice. In the following section, the research paradigm, with the epistemological and methodological bases of Action Research as a multi-method research approach, the understanding of organisations as open systems, and the role of the researcher following Kolb's research categories are discussed. (Kolb, 1984).

3.4 Research paradigm

3.4.1 Concept of interpretivism

The research paradigm is defined as “the set of common beliefs and agreements about how a problem is understood and addressed” (Kuhn, 1962). The presented research project examines performance and Performance Management in a German Hidden Champion. In sections “2.6 - Definition of performance” and “2.7 - Definition of Performance Management”, where the understanding of performance is influenced by several stakeholder groups through the evaluation of efficiency, effectiveness, and the perception of financial and non-financial performance - in other words an interpretive perspective on performance, are discussed. The research paradigm and the intended design and methodology should, essentially, reflect the interpretive nature of the subject of performance addressed in this research project.

Interpretivism views knowledge as constructed in a way that is contingent on convention, human perception, and social experience (Greenwood and Levin, 2007). Interpretivism emphasizes the understanding and interpretation of phenomena and establishing a meaning out of this process. Interpretivism is critical to the positivist assumptions and practices, and turns skeptical evidence to empirical evidence and any claims to universalism, realism, or objective truth (Storberg-Walker, 2006, Gergen, 1996). Interpretivism admits that its position is merely a view, a more or less coherent way of understanding things as a model of the world. This implies that the production and interpretation of research data relies on agreed conventions, human perceptions, and social experiences embedded within cultural relationships. Thus, the research fails to verify, falsify, or otherwise justify a theoretical position outside a commitment to a range of empirically arbitrary and culturally embedded conceptualizations (Gergen, 1996). It is important to consider that the a priori selection of theories determines, in large measure, the outcomes of the research (Gergen, 1996). From an interpretivist perspective, research that aims to winnow out the false, the imprecise, and the inconsistent forms of theory, in order to find the single best "objectively truth", is the wrong approach (Gergen, 1996). In the context of the case study research, this means

that organisational actors are fully capable of generating their own theories or "models" which can be more organically suited to their practices than presented by the organizational scientist. While such local understandings may lack the elegance and sophistication of official theory, in terms of immediate needs, they can, in fact, be more valuable (Gergen, 1996).

Interpretative and participative forms of research, like Action Research, show a way of conducting research to solve every-day-problems of involved practitioners and to generate new knowledge and add new aspects and insights to science (Van de Ven, 2007, Van de Ven and Johnson, 2006, Mohrman et al., 2001). Action Research, as an interpretive methodology, rejects the alleged superiority of the professional research knowledge over the practical knowledge of the participants of the research project, and values both categories of knowledge and brings them together in form of valid, credible knowledge and wise action (Greenwood and Levin, 2007). Van de Ven further reinforces this argumentation for interpretivism and pleads in his book, “Engaged Scholarship” (2007), for participative forms of research to avoid the widening difference between practice and science, which has been occurring in the last years (Van de Ven, 2007). He argued that practitioners often fail to adopt findings of traditional positivist research and that this is a well-known phenomenon in different disciplines (Van de Ven, 2007). The main reason for this development is that researchers often formulate research questions that are not grounded in practice. Relevant stakeholders (practitioners, users, sponsors, researchers from different disciplines) are often not involved in the formulation of a research question. Results and findings are often not communicated in a form that facilitates their transfer, interpretation, and use by an audience as intended. The context of the practitioner is situated to problems encountered in everyday activities - with difficulties operationalising generalisations and theories of formal logical principles or rules involving causal relationships (Van de Ven, 2007, Van de Ven and Johnson, 2006).

The presented research project uses an interpretive research paradigm. The interpretive point of view was realised through the usage of an Action Research approach with the participation of practitioners with different functional experience and ones who made important contributions to the understanding of the research subject that is being investigated. Practitioners were involved in every step of the research project which ensured feasible and workable activities and practical relevance of all findings (Van de Ven, 2007, Van de Ven and Johnson, 2006). The development of a tailored Performance Management approach for the SME and Hidden Champion can be seen as rather theoretical work and an attempt to close the identified gap of knowledge. The effect of the implementation of the formulated specific Performance Management approach in the case SME and Hidden Champion is a practical contribution, which can either be of a quantitative or a qualitative nature. At the end of the research project, the different stakeholders evaluate the results of the research project and decide about the success or failure of the improvements, in terms of financial and non-financial performance, or rather in terms of theoretical contribution (Stringer, 2014). The interpretive nature of the results leads to theories and models that are organically suited to the practices in the case company - this applies to the theoretical and practical contribution of the research project. This may be seen as either a strength or a weakness of the research project and is discussed in chapter “6 Conclusion and limitations”.

The assumption of interpretivism for the presented research project implies a specific point of view on organisations and has influence on the measures for company development. This also influences the design of the research project and will be discussed in the next section.

3.4.2 Understanding of organisations

A contemporary interpretivist perspective of organisations defines them as social constructions created by human beings to serve their ends, to meet a need, or to pursue collective goals (Coghlan and Brannick, 2002). All organizations have a management structure that determines relationships between the different activities and the members, subdivides, and assigns roles, responsibilities, and authority to carry out different tasks. All processes in organisations are shaped and affected by human purpose. Organisations do not exist independently from minds and actions, they are systems of human action, in which means and ends are guided by values and intended outcomes. Organizations can be understood as open systems - they affect, and are affected by, their environment. These perspectives on organisations have implications for rigorous inquiry, as empirical observation and logical reconstruction of organisational activities may not be sufficient to uncover the meanings, whether explicit or tacit, which organisational members hold and have held. The Action Research approach is founded on the notion that organisations may be understood experientially through processes of deliberate change (Coghlan and Brannick, 2002).

The consequences of the interpretivist definition of organisations for the research project are that the ends, needs, collective goals, intended outcomes, and the relationships of the different stakeholders shape the organisation and their formal and informal processes, and must be uncovered (Doppler and Lauterburg, 2002). Explicit formulation of the individual aspects of the understanding of the organisation and of performance, and subsequently adjustment or alignment to a normative formulated strategy, should improve resource allocation and decision making processes - in other words financial and non-financial performance. The resulting process of organisational and personal development should be done carefully and should integrate different perspectives and viewpoints, especially more than the 3rd person perspective of traditional positivist research, which will be discussed in the next section.

3.4.3 1st, 2nd, 3rd audience research in companies

Following Kolb's (1984) experiential learning theory, a useful integrative approach to research incorporates a three-voices audience: the first, the second, and the third person (Kolb, 1984). Traditionally, research focused on the third person approach: which entails researchers doing research on third persons and writing reports for other third persons (Schön, 1983, Kolb, 1984). In the present research project, in the form of an Action Research Design, all three perspective were relevant and embedded, which allows several opportunities for 1st, 2nd, and 3rd person reflections and learning processes.

First-person research is characterised as a form of inquiry and practice that one does on one's own. This addresses the individual's ability to inquire about their own life and to act out of awareness and purposefulness. In the current research project, the researcher and the participants reflect their individual behaviour in the research project and the Hidden Champion, and derive individual measures for improvement of the research project and the financial and non-financial performance of the case company. Second-person inquiry, or practice, addresses the researcher's ability to inquire into, and work with, others on issues of mutual concern, through face-to-face dialogue, conversation, and joined action. This happened many times and led to impulses for the reflection of current procedures, as well as leading to measures for improvement of the financial and non-financial performance of the Hidden Champion. Third-person inquiry, or practice, aims at creating communities of inquiry, involving people beyond the direct second person-action. Third-person is impersonal and is actualised through dissemination by reporting, publishing, and extrapolating from the concrete to the general (Schön, 1983). This was also part of the research project and was done by the researcher through creating reports and presentations in different phases of the research project.

The use of an interpretive perspective of second-person practice is primary for Action Research. This means working with others in collaborative pro-

cesses that engage them in the constructing of the project, as well as planning action, taking action, evaluating action, and framing learning that individual (first-person) learning takes place. Actionable knowledge for a third-person audience emerges from first hand experience and learning (Schön, 1983, Reason, 2006). This justifies Kolb's experiential learning theory pertaining to the use of an interpretive research paradigm for the present research project.

3.4.4 Stakeholders and their interests in the research project

According to the interpretive Research epistemology, the perspectives of the different stakeholders of the case company are relevant. The relevant stakeholders were identified by the researcher based on prior work and knowledge of the company. The list of potential relevant stakeholders was then discussed with the senior owner and the two owner brothers. The following stakeholders and their perspectives on the research project were identified:

Stakeholder	Interests of the stakeholder
Senior owner	Positive company development and expanding leading market position - use of positive development of industry sector Development of a sustainable SME and Hidden Champion specific strategy Financial and non-financial performance improvements Improvement of managerial competencies of owner brothers and heads of departments

Stakeholder	Interests of the stakeholder
Owner brothers	Positive company development and expanding leading market position - use of positive development of industry sector Development of a sustainable SME and Hidden Champion specific strategy Financial and non-financial performance improvements Improvement of managerial competencies of owner brothers and heads of departments Participation in the development, implementation, and evaluation of the research project Implementation of a business intelligence tool Improved employee retention Modern style of management Recognition of the senior owner in leading and developing the Hidden Champion
Heads of departments	Positive company development and expanding leading market position Participation in strategy development Improvement of managerial competencies Financial and non-financial performance improvements Secure workplace in innovative atmosphere with professional challenges Implementation of a business intelligence tool Improved employee retention Modern style of management Recognition of the two owner brothers for their participation
Employees	Long-term positive company development Secure workplace in innovative atmosphere with professional challenges in interesting jobs Modern participative leadership style of management
Banks	Sustainable company development Long-term stability and positive cash flow Improvement of managerial competencies of owner brothers and heads of departments Transparency and open communication

Stakeholder	Interests of the stakeholder
Business partners, e.g. customer, supplier, and competitors	Positive company development Innovative products and services Long-term fair cooperation
Researcher	Successful research project with financial and non-financial improvements for the case company Validated practical contribution in the form of a strategy map and PM implementation approach for SMEs Theoretical contribution to the field of SMEs, Hidden Champion, and Performance Management theory
University supervisor	Successful research project with theoretical contribution to the field of SMEs, Hidden Champions, and Performance Management theory Involvement in the evaluation of the project
Practitioner of other SMEs and Hidden Champions	SME and Hidden Champion specific strategy map and Performance Management implementation process Evaluation of invested resources compared with financial and non-financial performance improvements
Scholars in the field of SMEs and Performance Management	Theoretical contribution to the field of SMEs, Hidden Champions, and Performance Management theory Generated knowledge through validation of research approach

Table 15 - Stakeholders and their perspectives on the research project

The above table was created as a result of the individual interviews with the senior owner, the two owner brothers, the heads of departments, and the university supervisor. The interests of the employees, practitioners, and scholars were derived from the interviews. The perspective of the stakeholders was supportive and positive for the research project. The positive environment and growing industrial sector of special purpose industrial machinery production, as well as the successful company development in the recent years were also supportive for the research project.

The relationships of the senior owner, the owner brothers, the heads of departments and the employees, among each other, were positive too. The stakeholders had corresponding interests for a sustainable and positive company development. performance improvement is, furthermore, a relevant subject for any SME and Hidden Champion in general, and for the case company due to the change of the general management in particular.

The desired stakeholder involvement and engagement in the development and implementation of the research project includes iterative processes of dialogue and co-creation of knowledge and learning. Consequently, this supports a research approach of Performance Management Design and its implementation in a participative design. The stakeholders and the researcher are interested in producing collaborative research outcomes that serve as inputs for the next tasks in the research project, encouraging them to learn and develop their understanding based on the outcomes in every phase of the research project. This co-creative participatory approach goes far beyond consultation, in which stakeholders provide feedback on research without participating in the creation of the results themselves (Gramberger et al., 2015).

3.4.5 Double role as researcher and consultant

The researcher has, in the past, completed a consulting project for the case company regarding the implementation of a quality management system. The researcher acted in the presented research project as an outside researcher, but had privileged status as a former management consultant. Therefore, the researcher already had some additional information and existing positive relationships with the senior owner, the two owner brothers, the heads of departments and the employees of the company, as though he were an insider. The issues of the role change from former management consultant to researcher were discussed between the researcher, the senior owner, the two owner brothers, and the heads of departments of the case company. The situation was rated positive by all participants and was valued as enrichment for the research project. The general differences of insider/outsider research were discussed in the literature, initiated by Merton’s

(1973) original analysis of White outsiders doing research in the Black community (Merton, 1973). According to Merton, outsiders are frequently valued for their objectivity and birds-eye-view with emotional distance from a situation, but may find it difficult to gain access to research participants. Insiders engage research participants more easily and use their shared experiences to gather a richer set of data, but may have difficulties in separating their personal experiences from those of the research participant's, and are confronted with questions about potential bias in their research. Insiders regularly have to deal with issues of confidentiality when interviewing employees about sensitive subjects (Kerstetter, 2012).

Herr and Anderson (2015) extended the insider/outsider discussion and identified advantages and risks when participants take part in research projects, and are at the same time managers or employees in the organisational setting. They argue that the complication increases if the Action Researcher is part of the organisation as an insider in contrast to a researcher from outside the organisation (Herr and Anderson, 2015). According to Herr and Anderson (2015), an insider is more "experience-near" to the everyday life of organisations and has advantages in the generation of practical knowledge. Outside researchers create knowledge from a different and detached perspective and have advantages pertaining to generated theoretical knowledge. The theoretical knowledge primarily generated by outsiders is often viewed by practitioners as theoretical and a "rhetoric of conclusions" with little understanding of the real organisational issues, but this is valued by researchers due to less involvement in the specific situation. The privileged status of the researcher, as a former management consultant, retained the advantages of both the insider perspective and the advantages of the outsider perspective. The unique situation of the researcher, doing these collaborative and participative forms of Action Research, is useful in overcoming the discussion in the formulation of theoretical and practical knowledge/findings (Bui and Baruch, 2010, Van de Ven, 2007, Van de Ven and Johnson, 2006). External researchers, looking from a strict academic perspective, are interested in knowing how data is collaboratively analysed and findings are negotiated.

This information is included in the report of the research project (Herr and Anderson, 2015).

In the current research project, the researcher acted as an outside researcher and project manager of the research project. The established trustful relationships from past projects between the researcher and the participants had a positive effect on the project performance of the research project through openness, readiness, and fast implementation of measures. The former role of the researcher, as a management consultant, implied a high degree of trust, and it was understood that the goal of the research project is also that of the case company: to increase financial and non-financial performance or further develop something that supports the company's goal (Gummesson, 2014).

During the research project, the Action Research brought the researcher close to the object of study with the advantage that embedded knowledge can be uncovered. The researcher becomes both subject and object, while acting as project and change manager of the processes and events they are simultaneously studying (Gummesson, 2003). The advantage of this situation is that the researcher gets closely involved and privileged access. The disadvantage lies in the risk of becoming biased by being involved. These risk was met through the application of reflective log books, meetings, workshops with the senior manager, the two owner brothers, and the university supervisor of the research project. A systematic reflective practice was added to the research project through the planning of two workshops with the stakeholders of the project and the University supervisor. The aim of these workshops was the validation of the developed performance management approach and the evaluation of the two action research cycles. The results of these evaluation workshops are shown in section 4 - Data Collection, Analysis and Findings. There is no perfect solution to the dilemma of involvement, but the researcher in this research project, tried to find pragmatic ways of making positive use of the situation. The different activities in the research project are documented in chapter "4 - Data Collection, Analysis and Findings". It was a vital role of the researcher to bridge academic research and

practical implementation by merging analytic competence with hands-on experience to improve the financial and non-financial performance, together with the employees (Argyris and Schon, 1974, Smith and Argyris, 2001).

3.5 Action Research developments

The roots of the participatory Action Research in organisations used in this research project can be tracked to the work of Kurt Lewin (1890-1947), John Dewey (1859-1952), and their associates around the 1940s in the USA who worked in field theory, group dynamics, and organizational science (Nonaka, 1994, Eikeland, 2007). Lewin and Dewey had similar ideas on participatory democratic workplaces and schools, and criticised in their work the traditional separation of knowledge and action, and sought to integrate science and practice. They also believed that knowledge should be created from problem solving in real life situations (Coghlan and Brannick, 2002, Herr and Anderson, 2015). The interactive theories of organisational behaviour and social psychology lead to collaborative research with stakeholders with the notion of a participating and liberating intent (Bydon-Miller et al., 2003). Lewin termed the combination of experiment and application as "Action Research". (Adelmann, 1993, Argyris, 2001, Smith and Argyris, 2001).

In the late 1930s Kurt Lewin and his students conducted quasi-experimental tests in factory and neighbourhood settings to demonstrate the greater gains in productivity and employee behaviour through democratic participation, rather than autocratic coercion (Adelmann, 1993). Lewin's belief was always that social science should "reach the level of practical usefulness which society needs" (Reason, 2006, Small and Uttal, 2005). Lewin´s ideas were based on the notion that a process may be studied by introducing changes and then observing the effects of these changes on the process. According to Lewin (1947) change follows states via a procedure with the following three-steps:

- Unfreezing (of the present level)
- Moving (to the next level) and
- Freezing (at the new level) (Lewin, 1947)

This is described in terms of a revolving process as "a spiral of steps each of which is composed of a circle of planning, action and fact-finding about the result of the action." (Lewin, 1947). The original Action Research cycle formulated by Lewin comprises a pre-step and core activities like planning action and fact-finding, as shown in Figure 10 - Action Research Cycle.

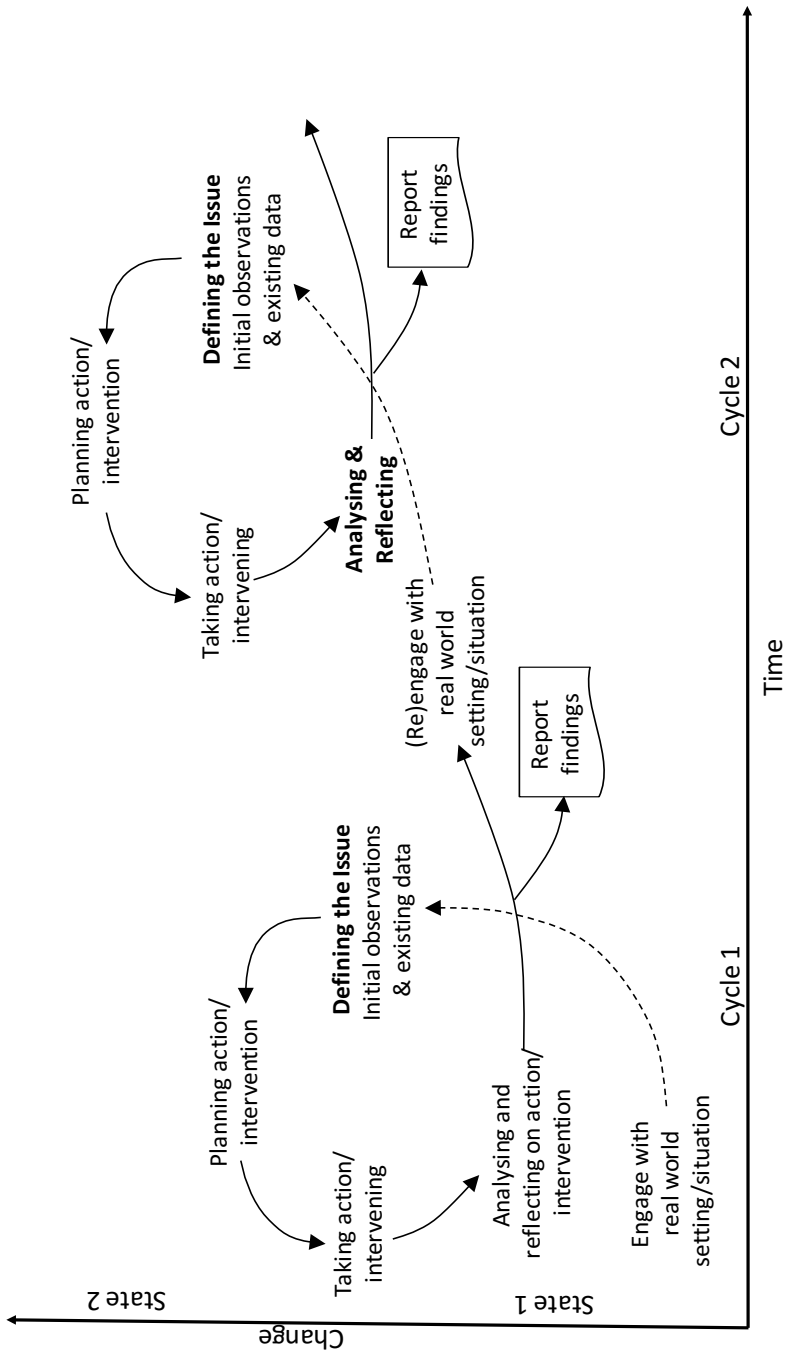


Figure 10 - Action Research Cycle

(adapted from (Coghlan and Brannick, 2002))

The pre-step stage of the Action Research process includes the participatory definition of the problem and the situation that should be improved. The planning activity comprises an overall plan and a decision regarding the steps to take in the research project, involving iterative cycles of joint action planning, gathering of data, diagnosis (reflecting on possible causes of the outcomes), as well as designing and implementing a course of action. The next cycle begins with examining the results of the actions, gathering more data, and implementing new strategies in order to continually improve the situation and address the problem. These activities form a continuing “spiral of steps” which is composed of planning, action, and fact-finding (analysis and reflection) about the results of the action (Coghlan and Brannick, 2002).

Lewin’s view of change was later criticised by Argyris and Schon (1974), who argued that it limited change to short-term interventions (Single loop) that move from one stable state to another rather than encouraging continuous organisational learning that could be sustained over time (double loop) (Herr and Anderson, 2015, Argyris and Schon, 1974, Talisayon, 2012). The idea of single and double loop learning is illustrated in the following Figure 11 - Single and double loop learning.

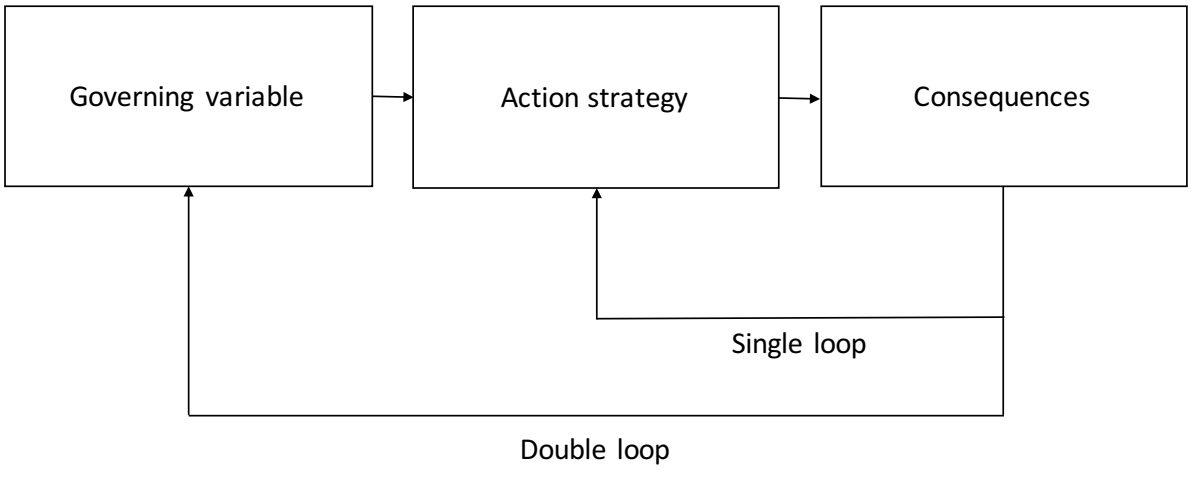


Figure 11 - Single and double loop learning

Single loop change exists when the norms of the system remain the same and changes are made within the existing norms. Double loop changes describes a situation where the norms of the system themselves are challenged and changed. Double-loop learning is seen as the more effective way of making informed decisions about the way we design and implement action (Argyris, 2001, Smith and Argyris, 2001). Consequently, Argyris and Schon's approach is to focus on double-loop learning. To this end, they developed an Action Research approach that describes features of theories-in-use which either inhibit or enhance double-loop learning (Argyris and Schon, 1974, Argyris, 2001, Smith and Argyris, 2001).

Action Researchers are traditionally working in different institutions like academia, industry, or the public sector and local governments. The Action Research approaches, that evolved over time, are united in the generic approach formulated by Lewin, but are divided in different methods, ideologies, and focal issues of concern, as well as the role of observed participants, or particular social groups, in different contexts, like small, medium, and large companies, schools, universities, or in the society of a more or less developed country. The following approaches illustrate the main developments and currents in the methodological debate about Action Research (Herr and Anderson, 2015, Stringer, 2014, Boehlke, 2010).

Label (Published) Description	**Author**	**Characteristic**
Lewin´s generic Action Research approach (1940)	Kurt Lewin	Generic Action Research approach developed by Kurt Levin in the 1940s
Generic continuous process of iterative cycles of joint action planning, gathering of data, diagnosis (reflecting on possible causes of the outcomes), designing and implementing a course of action. Next cycle begins with examining the results of the actions, gathering more data, and implementing new strategies in order to continually improve the situation and address the problem.		

Label (Published) Description	Author	Characteristic
Participatory Action Research (PAR) (1968)	Paolo Freire	Change of dominant social relations that create oppression and “a culture of silence”
Critical pedagogy means the teacher stands at the front and imparts information to the students who are passive recipients, which creates a 'culture of silence' and a negative, silenced, and suppressed self-image in the oppressed. The learner should instead develop a critical consciousness to overcome such culture of silence, which is created to oppress (Herr and Anderson, 2015, Stringer, 2014, Boehlke, 2010).		
Human Inquiry oriented Action Research (1993)	Peter Reason, Demi Brown	Participants are fully involved in research decisions as co-researchers – learning propositional / practical / experiential and presentational knowing
Full involvement of all active participants in research decisions as co-researchers (Srivastva and Cooperrider, 1990, Reason, 2006). Creation of different types of knowledge: propositional knowing (as in contemporary science), practical knowing (the knowledge that comes with actually doing what you propose), experiential knowing (the feedback we get in real time about our interaction with the larger world) and presentational knowing (the artistic rehearsal process through which we craft new practices) (Reason, 2006, Bydon-Miller et al., 2003, Srivastva and Cooperrider, 1990).		
Action Science and organisational learning (1996)	Chris Argyris Donald Schön	Single-loop and double-loop learning concepts to personal behaviours and to organisational behaviours
Aspect of single-loop learning and double-loop learning to change personal behaviours and organizational behaviour. Single-loop learning occurs when participants design their actions to achieve intended consequences that are governed by a set of environment variables. Double-loop learning cycles usually occur by openly inquiring about conflict when governing variables are transformed (Smith and Argyris, 2001, Argyris, 2001, Argyris and Schon, 1974, Senge, 1996).		

Label (Published) Description	Author	Characteristic
Living Educational Theory Approach (LET) (2012)	William Barry	Educational theory, proven to improve the learning of people within a social learning space
Role and self- behaviour of the researcher in Action Research projects to challenge the status quo of their practice, values, and beliefs, and answer the question, 'How can I improve what I'm doing to enable learning of participants?'. The idea is to make an original contribution to knowledge by development and implementation of a validated change in the organisation, transformational growth of the researcher, and improved learning by the participants researcher claimed to have influenced (Atkins and Wallace, 2012)		

Table 16 - Summary of Action Research Methods

The generic Lewin Action Research approach (1940) was enhanced in the last 75 years through contemporary ideas and developments. The following elements were added in the Research design for the current research project. Freire's (1968) work showed that Action Research, as a democratic process, works best on an equal basis of all participants in the organisation (such as employees, heads of departments, owner brothers, senior owner, and the researcher) and should be organised as a mutual learning and organisational development process (Herr and Anderson, 2015). The work of Reason and Brown (1993) enhances the Action Research approach based on human inquiry with the emphasis that all active participants are fully involved in research decisions as co-researchers, and are fully involved in planning, taking action, and the evaluation phases of the action research cycles (Reason, 2006). The work of Argyris and Schön (1993) added the aspect of single-loop learning and double-loop learning to Action Research Designs, not only to personal behaviours but also to organizational behaviours. The research design was formulated to establish single-loop and double-loop learning cycles to improve organisational behaviour and, where possible, transform the governing variables.

This was added through reflective practice with the participants at the end of Action Research cycle 1 and 2 (Argyris and Schon, 1974, Smith and Argyris, 2001). Another element of reflective practice was integrated through the planning of evaluation conferences with the participants, the researcher, the University supervisor and the external independent academic at the end of every Action Research cycle. The aim of this conference was reflective practice and “staff work”, to ensure original contribution to practice and knowledge by development and implementation of a validated change in the organisation, improved mutual learning by the participants and the researcher, application of a beneficial research design and methodology, and transformational growth of the researcher (Atkins and Wallace, 2012).

The analysis of the major developments enabled an informed decision on the selection of the suitable Action Research Design for the current research project, which is presented in the next section.

3.6 Action Research Design for the current research project

The discussion of the definition and characteristics of Action Research as a longitudinal case study showed that this research approach is a suitable and promising approach for aiming the intended ambitious research objectives in the context of SMEs and Hidden Champions. Action Research is based on the participation of practitioners in a democratic research process. This enables the design and implementation of a SME and Hidden Champion specific and tailored Performance Management approach in the case company, in order to improve financial and non-financial performance. Due to the close cooperation of the researcher with the practitioners, it is possible to address the SME and Hidden Champion characteristics, solve the day-to-day and practical problems of the company, designing and implementing Performance Management, and workin on the generation of practical and theoretical knowledge regarding the research objectives. The draft Action Research process, presented in Figure 12 - The Action Research spiral (Saunders et al., 2012), was developed by the researcher based on the literature review and

discussions with the university supervisor, the senior owner, and the owner brothers of the case company in the initiation phase of the research project:

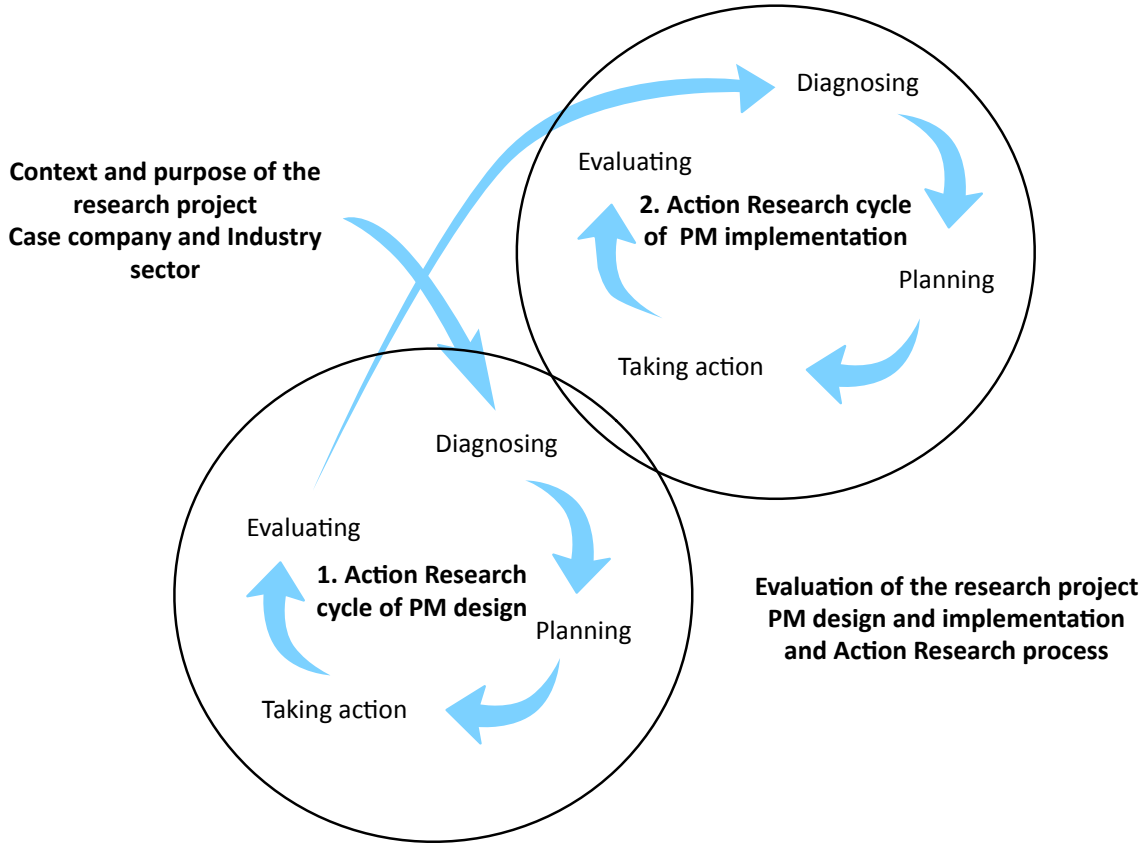


Figure 12 - The Action Research spiral (Saunders et al., 2012)

The resulting phase plan of the research project is shown in Figure 13 - Phase plan of the research project:

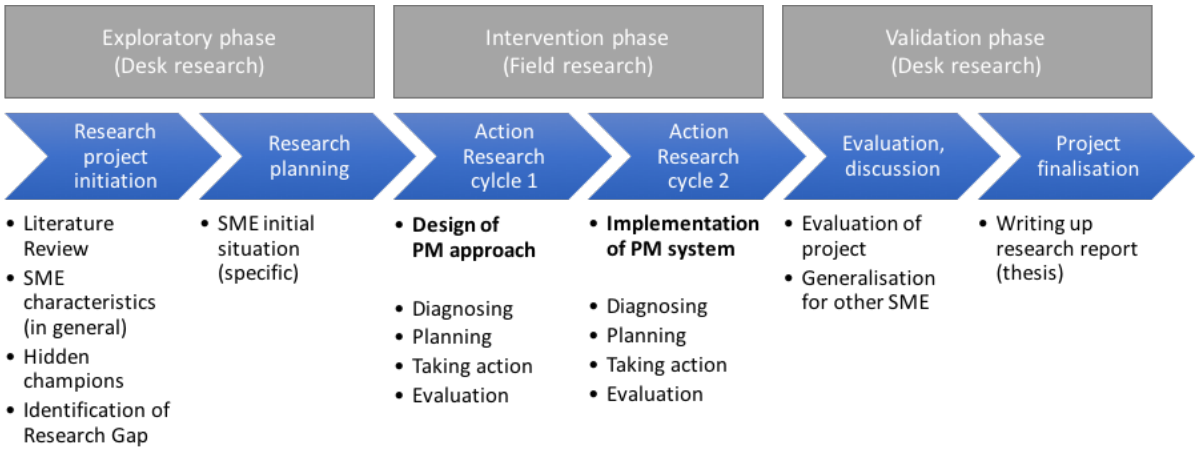


Figure 13 - Phase plan of the research project

The research project initiation included the step of “context and purpose analysis” of the first Action Research spiral and was done from October 2015 to April 2016. The performed activities were listed in Table 17 - Actions performed in the context and purpose step, below, and started with a series of talks with the two owner brothers of the case company. The results of this phase were documented in section “4.2 - Context and purpose of the research project”. The information regarding the research context and the information of the case company, a German Hidden Champion, is shown in section “1.2 - Case SME used in the study”. The research project preparation and desk research started in January 2016.

Actions / Tasks	Participants	Deliverables	Date
Development of a draft research project in participative Action Research Design	Researcher, DBA program director of studies, University supervisor	Literature Review, draft project plan	10.2015
Presentations of draft research project / discussion potential participation	Senior owner, 2 owner brothers, researcher	Letter of intent to participate research project	11.2015
Discussion of project, preparation of project plan, development of research project objectives	Senior owner, 2 owner brothers, heads of departments, researcher	Project plan for the research project, resources, schedule, cooperative development of research objectives	01.2016-04.2016
Ethics approval for the research project	Researcher, ethics committee	Ethics approval	04.2016

Table 17 - Actions performed in the context and purpose step

The working group was organised by the researcher according to the above activity list. In the beginning, the team discussed and decided the research objectives which are presented in section 1.4 - Research objectives". The research project was planned in participative Action Research as a longitudinal case study over approximately 18 month to avoid economic bias effects like delayed invoicing. The first Action Research cycle intended to develop the tailored SME and Hidden Champion specific design of Performance Management System, and the second Action Research cycle focused on the implementation and validation of the Performance Management approach. The researcher's position in this project was "outsider doing research with insiders" and is discussed in section "3.4.5 - Double role as researcher and consultant". The following brief structure of the Action Research project was co-op-

eratively developed in the working group. The following tables show the research process as a result of the initialisation phase. Detailed project plans and the description of the conducted activities are documented in chapter 4- Data Collection, Analysis and Findings. Table 18 - Action research cycle 1 shows the activities planned in the first Action Research cycle with the type of documents and information that was to be collect from the participants.

Action Research cycle 1				
Action Research Phase	**Tasks**	**Source of data**	**Participants**	**Type of data**
Diagnosing	Analysis of actual performance measurement	Interviews and workshops	Senior and executive management	Qualitative data
Planning	Development of a Performance Management approach	Interviews and workshops	Senior and executive management	Qualitative data
Taking action	Implementation of the Performance Management approach	Workshops, project management, Key performance indicators (secondary data)	Senior and executive management, employees	Qualitative and quantitative data
	Realisation of the Performance Management approach	Workshops, training, project management	Senior and executive management, employees	Qualitative Data
Evaluating	Evaluation of the Performance Management approach	Interviews and workshops, survey	Senior and executive management, employees	Qualitative data and quantitative data

Table 18 - Action research cycle 1

The following Table 19 - Action research cycle 2 shows the information for the activities performed in the second Action Research cycle.

Action Research cycle 2				
Action Research Phase	**Tasks**	**Source of data**	**Participants**	**Type of data**
Diagnosing	Improved performance measurement	Interviews and workshops, Survey	Senior and executive management, employees	Qualitative data Quantitative data
Planning	Redesign of performance measurement approach	Interviews and workshops, feedback, training and workshops	Senior and executive management	Qualitative data Qualitative Data
Taking action	Implementation of the redesigned performance measurement approach	Workshops, project management, Key performance indicators (secondary data), training	Senior and executive management, employees	Qualitative and quantitative data
	Realisation of the multidimensional problem solving approach	Workshops, project management	Senior and executive management, employees	Qualitative Data
	Evaluation of the multidimensional problem solving approach	Interviews and workshops, survey	Senior and executive management, employees	Qualitative data and quantitative data
Evaluating	Evaluation of the redesigned Performance Management approach	Interviews and workshops, survey	Senior and executive management, employees	Qualitative data and quantitative data

Table 19 - Action research cycle 2

Parallel to the activities in Action Research cycle 2, the Evaluation phase of the research project was planned following the tasks listed in the Table 20 - Action research– Evaluation of research project.

Parallel Action Research cycle 2				
Evaluation Phase	**Tasks**	**Source of data**	**Participants**	**Type of data**
Evaluation of Action Research cycles 1 & 2	Review of the Performance Management implementation	Interviews and secondary data of the project	Senior and executive management	Qualitative data Quantitative data
	Review of the Action Research process	Interviews and secondary data of the project	Senior and executive management	Qualitative data Quantitative data

Table 20 - Action research– Evaluation of research project

The brief project plan was discussed with the senior owner, owner brothers, and the heads of departments. The result of the discussion was a project plan that showed in Figure 14 - Project plan of the research project.

The fieldwork of the research project and data collection started in April 2016 and completed in September 2017 with the end of the evaluation of the second Action Research cycle. The first Action Research cycle was performed to analyse the initial situation, design a company strategy, and design and develop a tailored Performance Management approach. The first cycle took nine months and was performed in 2016.

Figure 14 - Project plan of the research project

The second iteration of the Action Research cycle was done to implement the Performance Management System and to improve the first draft of the Performance Management approach. The second Action Research cycle also lasted nine months and was planned from Jan-Sept 2017. At the end of the first and the second Action Research cycles, research conferences for the joint reflection of the activities and results of the research project were organised with the university supervisor, an external researcher, the two owner brothers, the executive staff of the Hidden Champion, and the researcher. The researcher presented a report of the actions conducted in the Action Research cycles. The participants at the conference discussed the course of the project, the findings, recommendations of the researcher, and the wishes and interests of the management team of the Hidden Champion. The results from the conference were built into modified plans for the subsequent Action Research cycle activities.

3.7 Data collection strategy

The purpose of the formulated data collection strategy was to ensure that all the relevant data was collected during the Action Research intervention to ensure that sufficient analysis could take place in order to work on the research objectives. According to Mashall and Rossmann (2011), and Yin (2009), researchers in qualitative studies, and more specifically in case studies, apply several methods for gathering data: participation in the setting (working groups, meetings), direct (participant) observations, (in-depth) interviews, and the review of documents, archival records, culture material, and physical artefacts (Marshall and Rossmann, 2011, Yin, 2011). The data collection in the presented project was planned to be carried out using mixed methods of qualitative and quantitative data, e.g. interviews, workshops, focus groups, observations, and documentary analysis. (Bryman, 2008, Saunders et al., 2012, Ambert et al., 1995, Van de Ven, 2007). Different data gathering techniques were employed and were chosen to picture best the variety of empirical materials, in accordance with the principles of Yin (2011). Most applied data gathering techniques in the current research project were,

due to flexibility, observations (individual, working groups), field notes, unstructured and semi-structured interviews (individual and working groups), documentation reviews, and archival documents.

In the presented research project two iterations of the Action Research cycle were done. Due to the nature of the subject of cycle 1 - the design of the Performance Management approach, interview, workshop, and meeting data was primarily collected. In cycle 2 - the implementation of the Performance Management approach, the share of documentary information increased through increasing collection of performance data in the Hidden Champion. The data collected during the research project can be classified in three rough categories: results of interviews, workshops and meetings, field notes, and documents:

Data set (Number)	Data type
Interviews (26), workshops (18) and meetings (128)	Audio files, transcripts, field notes, agenda, meeting minutes, researcher log book
Field notes (161)	Observation data, field notes, annotations, photos, transcripts, metaplan boards
Documents (456)	Emails, business documents, balance sheets, profit and loss statements, excel documents, documents from the Business Intelligence System

Table 21 - Data set and data type

The above data was produced, saved, and analysed during the two Action Research cycles in this research project over a period of 18 months. These documents had different IT formats such as, Word documents, PowerPoint presentations, Excel sheets, and Visio diagrams. The collected documents and collected information, such as audio recordings, transcriptions, codings, workshop documentation, balance sheets, income statements, and KPI statistical analyses, were collected and stored by the researcher in a separate office outside the case company with restricted access (only to the researcher). Additionally, several internal documents and archival records were

produced by the case company, during the course of its day-to-day business, which were used and analysed in the research project. The planned research processes are presented in Table 18 - Action research cycle 1, and Table 19 - Action research cycle 2, and include the planned procedures of data collection. The performed tasks, participants, source of data, and type of date are explained in detail and a report of the collected data during the course of the fieldwork is documented in section 4 - Data Collection, Analysis and Findings. Due to the nature of the research project as a business project, working together with the general management, the senior owner, the two owner brothers, and the heads of departments, the planned workshops, interviews, etc. took place in the meeting rooms and offices of the Hidden Champion. Most of the data gathered was documented in the German language. Meetings were held in the German language, meeting minutes and workshop documentation were written in the German language too, transcripts and codings and further analysis were also done in German and then translated into English (translation of relevant data and outcomes are provided in the text and the appendix of this thesis). The following methods for data collection were applied:

Interviews and feedback presentations- Nvivo

During the course of the project, especially in the beginning, the analysis of the initial situation of the company, e.g. different evaluations, and confidential one-on-one interviews were conducted with the senior management, the two owner brothers, and the heads of departments. In preparation for the interviews, semi-structured questionnaires were designed from the literature, and the interviews were conducted, and recorded with a digital audio recorder. The gathered raw data was transcribed and explored with Nvivo to identify relevant codes or issues.

Meeting documentation

In total, over 100 meetings in the different project phases were performed during the research project. Every meeting was prepared with an agenda by the researcher or the Hidden Champion and the results were documented through meeting minutes. The agenda and minutes were documented by IT

in the office of the researcher. Additional field notes were taken by the researcher, which were used in subsequent activities of the research project - like opponents and proponents or positive and negative attitudes on specific subjects.

Workshop documentation

A large number of workshops with the owner and the executive staff were planned and performed by the researcher. The content of the workshops was delivered by presentations and the subsequent discussions, and the derived measures and results were documented with metaplan or pin boards. Metaplan, or pin boards, structures the thinking processes within the context of group work and is a creative method for collecting and processing ideas and opinions when a group of people are working together. People in the group write down their own ideas or opinions on a topic in form of written Brainstorming - one idea on one card. Then all the cards are collected and fixed on a pin board. The cards are organised according to categories and ranked. The clusters of ideas may yield insights or reveal connections that people were not aware of (Schnelle, 1978). The metaplan, or pin boards, were documented by the researcher as pictures like the sample documentation shown in Figure 15 - Sample of metaplan pin boards as workshop results.

Figure 15 - Sample of metaplan pin boards as workshop results

Additional field notes were taken by the researcher to picture the processes of discussion.

Documentary analysis

The evaluation of the financial and non-financial performance was done with IT support and in the form of documentary analysis of income statements, balance sheets, and KPI statistics. The nature of the data collected by these documents was mostly quantitative data. In the first phase of the project, the documents were analysed with Excel spreadsheets. KPIs were identified, typed in spreadsheets, and analysed with tools like Excel. Due to the fast-growing amount of data, a business intelligence tool was used to generate and analyse the KPIs. The software was chosen, purchased, and implemented by the Hidden Champion on their own.

Project management documentation

The researcher acted as project manager of the research project. Project related documents, like project scope, work breakdown structure, project plan, resource planning, task descriptions, status reports, and project progress presentations, were collected as part of the research project documentation.

Researcher logbook

The researcher filled a logbook during the research project to document decisions and special events for later analysis. This logbook was part of the internal documentation of the research project and was used for regular reflection and critical review of the research project progress.

University supervisor conferences

At the end of Action Research cycles 1 and 2, a research conference was organised and performed to evaluate the research project. Invited to these conferences were the two owner brothers, the university supervisor, an independent academic, and the researcher. The subject of the meeting was a reflective session of the performed tasks of cycles 1 and 2, and the identification of improvement potential. Data gathered in this conference was in the form of minutes of the conference, researcher logbook recordings, workshop documentation in the form of metaplan boards, and reflective comments in the form of emails after the conference.

In total, a significant amount of different data was gathered throughout the course of the research project. All data referring to persons was stored in a separate and secured office belonging to the researcher and was neutralised in any analysis to fulfil anonymity and confidentiality of the gathered data. The data used to evaluate the performance of business processes was stored in the ERP system and the IT system of the Hidden Champion, and was temporarily available for research purposes. The data analysis will be explained in detail in the next section.

3.8 Data analysis strategy

The analysis of qualitative data collected in the research project followed an inductive grounded theory building strategy. The following brief five phase process, presented by Bryman (2008) and Yin (2011) (Yin, 2011, Bryman, 2008), was used to analyse the gathered qualitative data. These five steps are compiling, disassembling, reassembling, interpreting, and concluding, and can be understood as a general guideline of data analysis, but not as a strict cookbook due to the non-linear nature of the data analysis. The gathered data was compiled in the first phase, e.g. the interviews were audio recorded and transcribed by the researcher. Disassembling means breaking down the compiled data into smaller fragments, or pieces, (codes). This step was done several times as a thematic analysis of the data to identify commonalities, differences, and relationships in the raw data in the form of a trial-and-error process of testing codes. The codes from the interviews performed in Action Research cycle 1 were used to uncover the initial situation of the hidden champion regarding Performance Management. The four most addressed subjects in the interviews were:

Code	Number
Transparency in all phases of project management missing	115
Available data from sales inadequate	93
KPIs and reports missing on all levels	85
Lack of human resources, insufficient qualified, difficult to control	83
...	...

Table 22 - Extract of coding result of interviews (diagnosis phase 1)

The identified substantive themes (codes) were used to reorganise the disassembled fragments (reassembling). The rearranged data was then presented in lists and tabular forms for interpretation, as shown above. This list of codes and categories was used to develop tentative findings and create a new narrative that was presented and discussed in workshops with the participants (Saunders et al., 2012).

Feedback on the presentations was documented by the researcher in the form of metaplan, or pin board, documents. The metaplan boards were documented by pictures as shown in Figure 15 - Sample of metaplan pin boards as workshop results. The aim of the workshops was to develop a mutual understanding in the management team regarding the different findings of the interview subjects and to derive measures if necessary. The results of these workshop discussions were used to improve the results and conclusion of the thematic analysis (Ambert et al., 1995, Bryman, 2008, Saunders et al., 2012). These phases of data analysis did not fall in a linear sequence, like a cookbook, but had recursive and iterative relationships (Yin, 2011, Bryman, 2008). This process was supported by the use of NVIVO - a software for the Computer Assisted Qualitative Data Analysis (CAQDAS) for qualitative data analysis.

The analysis of further field data and documentary information, like quantitative data of the different research project tasks, meetings, workshops, evaluation conferences, and researcher logbook, was carried out by the researcher starting with raw data collection, analysis regarding the desired objective, and deriving measures to ensure focus on the research objectives. Theory regarding the improvement of financial and non-financial Performance and the Performance Management approach was also generated using an inductive process of theory building strategy and is pictured in the following sections (Van de Ven and Johnson, 2006, Saunders et al., 2012, Bryman, 2008) . The above data analysis strategy was applied several times during the research project, especially the beginning of the project and the analysis of the initial situation and at the end of the research project.

Another important part of the data analysis was created through tracking of research project progress. The intended financial and non-financial performance improvement in the Hidden Champion required many different tasks, starting from preparation of data gathering, data gathering itself, IT support, data analysis etc. in the different departments. A lot of people were involved and had to be coordinated. The research project progress was tracked

through status reports, meetings were performed, and progress data was visualised in the form of revised project plans. The initial project plan changed several times throughout the course of the project, and the changes were documented as part of the research project documentation. Detailed information on data sets, data analysis, and findings are documented in section 4 - Data Collection, Analysis and Findings.

The data collection and analysis strategy used in the research project, such as interviews, workshops meetings, participant observation, researcher logbook, and document analysis, ensured the wide collection of qualitative, quantitative, processual, and behavioural field data. These multiple sources of data, picture the social constructions of reality experienced by the participants. The interpretivist, in this case the researcher, identifies constructs and intends to develop knowledge from the subjective experiences of the participants. This brings with it the danger of getting individual, or non-relevant information, during the course of the project, which could be criticised for lack of rigour and relevance. This was resolved through data triangulation to ensure valid and unbiased findings, e.g. by presentation of the increased company performance based on longitudinal data without seasonal effects or delayed invoicing for longer lasting projects. The effectiveness of measures in the Hidden Champion were evaluated with comparative before-after designs (Rose-Anderssen et al., 2010). The data about the results of the different interventions in the project was gathered either by informants making a retrospective subjective assessment of effects, or by using objective measures collected before and after, or by using both methods (Darke et al., 1998, Easton et al., 2000, Rose-Anderssen et al., 2010).

Nevertheless, there was a large amount of gathered data in the research project, including lots of personal data, organisation sensitive data, and confidential data. The following section explains the consideration of ethical behaviour and confidentiality in the preparation and realisation of the research project in the Hidden Champion.

3.9 Ethical considerations

Research ethics describe, in general, a professional code of conduct for the collection, analysis, reporting, and publication of information about research subjects. There are three key ethical issues of research that will be respected and implemented in the research project:

- The right of the research subjects to refuse their cooperation in the study, especially in the case study of the SME with a small number of participants.

- The right to stay anonymous and confidential with the provided information from the research participants in the project.

- The right to give or withhold informed consent, which means that the research results are not made public without the subjects' knowing agreement.

The ethical issues were dealt with by giving out written information to all participants, about the purpose of the research project, in a consent form. The employees of the company were free to refuse to participate in this study. All integrated employees agreed to their voluntary participation. To avoid siding with particular participants, the findings chapter will include multiple perspectives and contrary findings (Creswell, 2007, Spicker, 2011).

The selected participants were appropriate candidates to interview for the purpose of the research project because they are involved in the design and evaluation of the Performance Management process in financial and non-financial terms. Data gathered from interviews and workshops in the research project was collected via note-taking and face-to-face audio recording in a protected area in the company, and with confidentiality. Participants were approached first with the information sheet providing the details of the study purposes and format, and were asked to participate on a voluntary basis and to sign the consent form officially. Participation in the regular workshops of

the senior management and executive staff was also voluntary. Every workshop or interview started with a brief overview of the research project and the results so far, a consent form, and an opportunity to withdraw all data from the project when a participant felt uncomfortable. Performance Management does not tend to be a sensitive topic in most companies, as managers tend to talk about Performance Management to each other on a daily basis. Concerns of talking about Performance Management with an individual, or with each other in group settings with the participants, were considered in the research project.

For purposes of confidentiality, a code for each participant, for use in all field notes and computer-based records, was used. The names of individuals will not be revealed at any time. The identity of the company will also remain confidential in the documentation of the research project or documents like this thesis. The collected data and material will be deleted after the end of the DBA program. The researcher was working fully independently from the Hidden Champion in this research project as a management consultant for many companies from different industry sectors. Any direct or indirect cooperation with potential competitors was avoided. Ethics approval was granted by the Chair of the Humanities, Social, and Health Sciences Research Ethics Panel at the University of Bradford on 29th April 2016 on the basis of the description above.

3.10 Critical Reflection of the chosen research design

Every chosen research design has advantages and limitations that can lead to bias. Bias can occur at any phase of research, including study design or data collection, as well as in the process of data analysis and publication. The advantages and the justification for the chosen design of Action Research were discussed before. In this section, limitations that may affect the research findings are also discussed. There are potential sources of error, such as the participatory research design, methodology, researcher bias, or inappropriate translations as this study is conducted in German, but written in English (Wai-chung Yeung, 1997, Yeung, 1997). To avoid this language implied bias, a native English speaker was tried to avoid was integrated and did all the translations from German into English during the course of the research project.

The overall goal of an Action Research project is to introduce change to improve a specific situation with a specific group of participants (Argyris, 2001). The applied interpretive research paradigm of an Action Research project focuses on the way in which reality is constructed and perceived by the participants. This implies that the personal perspective of the participants is considered as the driving force for change in the research context (Miller et al., 2010). The perspectives and interests of the participants in the research project may change and prioritise practitioners' day-to-day problems. The participation with the practitioners could lead to distraction from initially formulated research objectives. The research design has to take into account that this could happen and has to ensure the balance between practitioner priorities and research objectives. The change of participant's opinions and priorities was part of the research data and was analysed especially to understand the interpretation of performance. Conscious reflection on possible changes was done through evaluation of the intended research objective in the evaluation phase in the case company and through two research conferences with the university supervisor and an external academic. The researcher had regular reflective meetings with the senior owner and the two owner brothers to discuss the pro-

gress, target-orientation, and the planned next steps in the research project. A regular exchange with the university supervisor of the research project and an independent external academic was done to avoid distraction. The researcher bias means that the researcher influences the results in order to portray a certain outcome which cannot totally be avoided. To uncover and minimise researcher bias, all relevant information, e.g. about the research design, sampling strategy, and the triangulation of results, is documented in this report of the research project (Creswell, 2007).

The danger of getting individual, or non-relevant information, during the course of the project was encountered by triangulation of the findings. The effectiveness of measures in the Hidden Champion was evaluated with comparative before-after designs (Rose-Anderssen et al., 2010). The data about the results of the different interventions in the project was gathered either by informants making a retrospective subjective assessment of effects or by using objective measures collected before and after, or by using both methods (Rose-Anderssen et al., 2010). These approaches are the most common and useful to avoid biases through unintended effects of researcher involvement. These are used either within a conventional detached researcher approach or within a collaborative action research approach (Rose-Anderssen et al., 2010).

Eikland (2017), and Herr and Anderson (2015) state that categories of knowledge generated in Action Research projects can be differentiated in practical knowledge that leads to a change within a specific practice setting itself, and theoretical knowledge with epistemic claims beyond the setting (Eikeland, 2007, Herr and Anderson, 2015). It is widely accepted that Action Research creates beneficial practical knowledge for a specific context, but researchers are less comfortable when the findings are presented as theoretical knowledge due to the purpose of generating primary practical knowledge based on personal and professional growth, and organisational and community empowerment in a specific context (Herr and Anderson, 2015, Van de Ven, 2007, Van de Ven and Johnson, 2006, Eikeland, 2007). The theoretical

and practical knowledge debate about the research epistemology and methodology of Action Research is more about the nature of professional practice itself and what type of knowledge can best inform them (Eikeland, 2007, Herr and Anderson, 2015). The generalisability of findings of Action Research projects is limited, per se. Rigor, relevance, and limitations of the research results have to be carefully considered for any research project and are discussed later in this thesis.

The current research project is done as a longitudinal case study with the participation of one organisation over a longer period to show trends and changes initiated trough specific measures. The current research project was planned over a period of 18 months to avoid seasonal or economic effects through delayed invoicing. The potential problem of longitudinal studies is the degree to which changes are the result of real differences over time, such as a changed market situation or influences of the study itself (Bryman, 2008). The gathered data in the presented research project was interpreted under consideration of internal and external effects and changes. It was attempted to uncover all the side effects influencing the financial and non-financial performance of the Hidden Champion - this is documented in chapter 4- Data Collection, Analysis and Findings

In the case study research, the case is the object of interest and the researcher aims to provide an in depth analysis of it. The standard criticism is that the findings deriving from a case study cannot be generalised. Any universal evidence claimed is limited due to restricted external validity. It is not the purpose of this research design to generalise for other cases beyond the analysed case, but carefully interpreted results and findings “exemplify” the research results for a broader category of cases. Therefore, “exemplify” is a suitable expression for the intended use or category of the findings of the current research project. (Bryman, 2008).

The above discussed categories are definitely not exhaustive in terms of potential limitations. However, various authors predominantly addressed

issues in research methodology, external and internal validation, as well as bias with regards to research limitations (Creswell, 2007)

3.11 Summary: Action Research Design

The research project followed an Action Research Design to design and implement a Performance Management System for the case company. In this chapter, the strengths and weaknesses of the design and methodology were discussed and Action Research was identified as a suitable research design and methodology for the research project. Action research is a qualitative research approach for carrying out collaborative research with practitioners and stakeholders using an interpretive point of view that guides the researcher to focus on relevant research subjects. Action Research ensures the application of findings into practice and the contribution to the scientific knowledge base (Small and Uttal, 2005). Results of the presented project are intended to contribute to practice in order to improve the financial and non-financial performance of the Hidden Champion, in addition to contributing to theory in the form of a validated SME and Hidden Champion specific Performance Management approach. The contribution of the participants and the researcher, as well as the roles of the senior owner and the two owner brothers and the executive staff, were identified as having an important influence on the design and implementation process. The process should be organised as a joint learning process and experience for the participants and for the researcher. The following research design was developed for the design and implementation of the Performance Management approach for the Hidden Champion. In the next chapter, the collected data, analysis, and the findings of the research project are presented. The following Action Research Design was applied in the research project. The design consists of two Action Research cycles of the design and implementation of a tailored Performance Management System in the case company.

Figure 16 - Research design of the research project

4 Data Collection, Analysis and Findings

4.1 Introduction

This chapter of the thesis highlights the activities performed in relation to the findings in chronological order of the research project's completion. Following the developed research design (see Figure 16 - Research design of the research project on page 123), the first step was the "analysis of the initial situation" to become immersed in the context and the initial situation of the company in their business sector, understanding the organisation of the Hidden Champion and the interests of the stakeholders, such as the owners and managers. For this reason, the brief background information of the industry sector and the local characteristics of the case company are analysed and discussed. The schedule, tasks, findings, and results of the two Action Research cycles are subsequently pictured.

The first action research cycle focused on the mutual definition of the Performance Management approach and began, necessarily, with the definition of the company strategy as the overall financial and non-financial performance aim of the Hidden Champion. The main focus of the second Action Research cycle was the improvement and strengthening of the Performance Management approach. The variety of field material gathered during the application of the Hidden Champion specific concept of Performance Management design and implementation is documented. The process of analysis and the explanation of meanings and interpretations are shown. Due to the interpretive design of the research project, patterns, difficulties, and problems encountered while working actively in the field are discussed.

Without prejudging the outcome of the research project, the positive effect of Performance Management implementation on financial and non-financial performance following an Action Research Design is documented and discussed.

4.2 Context and purpose of the research project

The first steps of an Action Research project are the mutual definition and understanding of the context and purpose of the research project. The brief procedure is shown in Table 23 - Pre-phase/Definition of the Action Research project.

Dates:	October 2015 – April 2016
Participants:	DBA program director of studies, ethics committee UoB, university supervisor of research project, researcher and the case company senior owner, 2 brother owner, senior manager, heads of department (11),
Data collection:	Analysis of the context of the case company Presentations and discussion on research objectives Development of research proposal Metaplan results of workshops and meetings Field notes and Monthly log report of the researcher

Table 23 - Pre-phase/Definition of the Action Research project

The tasks listed in Table 24 - Actions performed in the Context and purpose step were performed in the context and purpose phase of the research project. The mutual definition of the research project involved a lot of stakeholders with different interests. These interests were discussed, appreciated, and considered in the formulation of the research objectives and the definition of the research design (see 3.4.4 - Stakeholders and their interests in the research project).

Due to the prior work as project manager and management consultant for the case company the cooperation and discussions were based on a trustful relationship that was already established. This helped a lot while analysing the context and formulating the purpose of the research project.

Actions / Tasks	Participants	Deliverables	Date
Analysis of the context of the case company	Senior owner, 2 owner brothers , researcher	Findings regarding the economic environment of industry sector, and regional context.	10.2015
Development of a draft research project in participative Action Research Design	Researcher, DBA program director of studies, University supervisor	Literature Review, draft project plan	10.2015
Presentations of draft research project / discussion potential participation	Senior owner, 2 owner brothers, researcher	Letter of intent to participate in the research project	11.2015
Discussion of project, preparation of project plan, development of research project objectives	Senior owner, 2 owner brothers, heads of departments, researcher	Project plan for the research project, resources, schedule, cooperative development of research objectives	01.2016-04.2016
Ethics approval for the research project	Researcher, ethics committee	Ethics approval	04.2016

Table 24 - Actions performed in the Context and purpose step

The urgency and pressure for change in a company depends largely on the environmental conditions and factors like company size, growth potential, or intensity of competition (Balinski, 2013). The external environment of the case company is excellent and positively influences the interests and motivations of all stakeholders involved in the research project - management of growth is important. Stagnant or declining markets, in contrast, lead to measures to optimise or reduce the use of resources that usually lead to different interests and motivations from stakeholders. The industrial sector in-

cluding the gross value added in Europe and Germany, the strong export position and role of the German special purpose machinery manufacturing sector in automation and process improvement worldwide, and the role of the Münsterland region, are presented in this section.

4.2.1 Industry sector of special purpose machinery manufacturing

The case company produces special purpose machinery and belongs to the industrial sector of machinery and equipment and the sub-group of industrial processing machinery, according to the EU definition of industrial sectors (MacDougall, 2017). The machinery and equipment manufacturing industry is generally divided into general purpose machinery (e.g. ventilation, heating, air-conditioning) and special purpose machinery (e.g. industrial processing machinery, agriculture and forestry machinery, arms & ammunition, and domestic appliances) (MacDougall, 2017). The structural data of the machine and equipment sector in the EU-27 is displayed in the following table (MacDougall, 2017):

	Enterprises		**Turnover**		**Value Added**		**Persons employed**	
	(thousand)	(% of total)	(EUR million)	(% of total)	(EUR million)	(% of total)	(thousand)	(% of total)
Machinery & equipment sector	**174,0**	**100,0**	**621.319**	**100,0**	**192.559**	**100,0**	**3.649,5**	**100,0**
General purpose machinery	81,3	46,7	314.730	50,7	100.549	52,2	1.792,5	49,1
Industrial processing machinery	64,0	36,8	200.688	32,3	65.400	34,0	1.215,0	33,3
Agricultural and forestry machinery	22,2	12,8	40.000	6,4	8.922	4,6	212,0	5,8
Arms & ammunition	1,3	0.7	14 .402	2,3	4.687	2,4	97.3	2,7
Domestic appliances	5,2	3,0	52.711	8,5	12.711	6,6	287,6	7,9

Table 25 - Structural data of machinery and equipment sector

Source: (NACE Division 29 - EU-27, 2006) - (European Commission, 2009)

64.000 enterprises in the industry sub-sector of manufacturing industrial processing machinery generated EUR 65.4 billion of value added from sales of EUR 200.7 billion, and 1,215 million persons were employed working in >90 % small and medium sized companies (SMEs) (European Commission, 2009, Bititci et al., 2012). This represented around a third (33.3 %) of the machinery and equipment workforce in the EU (European Commission, 2009, Eurostat, 2017). A comparison of the data of the industrial processing machinery sector with the case company showed that the case company is one of the larger companies in the industrial sector with 135 employees, employees while the average company has 18.9 employees. The calculated revenue per employee is more-or-less on the same level compared to the industrial sector:

	Enterprises	Persons employed	Turnover		
			Sector	Per enterprise	Per employee
Industrial sector Industrial processing machinery	64,000	1,215,000 = 18.9 employees per company	200,688	3.13 million EUR	165,175 EUR
Case company		135		23.0	170,370 EUR

Table 26 - Comparison of the case company with industrial sector

In 2006, this sector had a turnover of EUR 200.7 billion. This turnover became EUR 226 billion in 2016 - which is an annual growth rate of 1.2%. Market forecasts for 2018 and 2020 predict revenue at the same level (MacDougall, 2017).

The structural data, broken down by each country in the EU, explains the prominent position of Germany in this industry sector. The German M&E industry contributed 36.6 % of sectoral value added in 2006 (see Table 27). The German share of the M&E sector (NACE 29) EU-27 value added was almost 2.3 times as high as the next biggest share, recorded in Italy (16.2 %), which in turn was 1.7 times higher than the third highest share in the United Kingdom (9.8 %) (European Commission, 2009, Eurostat, 2017).

	Highest Value added			Largest number of persons employed		
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)
1	**Germany**	**70,548**	**36.6 %**	**Germany**	**1,056.4**	**28.9 %**
2	Italy	31,184	16.2 %	Italy	567.4	15.5 %
3	United Kingdom	18,960	9.8 %	France	305.8	8.4 %
4	France	18,047	9.4 %	United Kingdom	278.1	7.6 %
5	Spain	9,319	4.8 %	Poland	196.6	5.4 %

Table 27 - Machinery and equipment sector - ranking of top five in EU
Source: (NACE Division 29) ranking of top five Member States, 2006 - (European Commission, 2009)

Over 50% of the revenue of the German industrial processing machinery industry is generated in international markets with a current export rate of 55%. The worldwide electrical and electronics industry is investing in production automation and the transition to new production processes, which is the key market for the case company (Bititci et al., 2016, Hagen et al., 2012, KFW Research, 2016, MacDougall, 2017).

Summarizing the economic data shows that the case company is working in a highly developed, export oriented, and competitive industry sector with positive future prospects and high growth rates (European Commission, 2009, Eurostat, 2017, Fullerton and Wempe, 2009). The local environment, especially the cultural and local characteristics for the case company, are discussed in the next section.

4.2.2 Local and cultural characteristics of the Münsterland region

The case company is located in the Münsterland region, which is in the north-western part of North Rhine-Westfalia - the most populated Federal State in Germany. This region is marked by the gentle park-like landscape, the Westphalian quiet nature of the people, beautiful old towns of half-timbered houses, farms, fields with horses, and ancient castles (NRW Bank, 2017). The region has a regional airport, the University of Münster, Universities of Applied Science in Münster, Steinfurt and Bocholt, and a large number of midsize companies in the machine and food manufacturing industry sectors, which are most important in the Münsterland region. Most machine manufacturing companies have a high export share – some of them up to 80% (NRW Bank, 2017). The average export share of companies in the Münsterland region is 38% (NRW Bank, 2017).

The employment situation in Germany, and particularly the Münsterland region, is positive. The unemployment rate was low at 4.7%. In 2015, the working-age population (18-64) was 64.5%, though this rate will decrease to 54.5% by 2040 due to the ageing of society. Finding an appropriate number of skilled employees is already a problem in this region (NRW Bank, 2017). Germany has a low youth unemployment rate and a high level of skilled workers. Vocational training provided by companies, which utilise the dual system, is the best way to acquire skilled staff following an OECD study (OECD, 2014). Many young people within Münsterland undertake vocational education and training and work for one of the SMEs in the region. Thus, they are able to pursue a professional career without the need of a university degree. Others leave the region for studying, starting a working life, and making their first career steps outside the Münsterland region, but many come back when they intend to start a family. This is a well-known phenomenon in the region and may be explained through the following facts in this section (Engl, 2017).

Locals are called Münsterländers. A brand study in 2016 analysed the common shared values of the Münsterländer and came to the result that the

awareness of regionalism focuses on “home”, “down-to-earth-attitude”, “nature-loving”, “natural occurring”, and “autonomy” (Engl, 2017). This leads to employees with loyalty, reliability, competence, and engagement – but also results in a lack of openness to new ideas and additional language skills. Employees are also not willing to travel far distances or to move to another region – they are often place-bound. On the other hand, however, there is no need to travel far in Münsterland due to the low unemployment rate, as employees are able to find a job near their hometown. Rural regions in close range to attractive towns and metropolitan regions, like Münsterland, are important places and prosperous regions in the context of urbanisation (OECD, 2014). A cottage in the countryside is affordable, while maintaining the benefits of the urban regions, particularly the availability of profitable jobs (Engl, 2017).

The macro-, meso-, and micro-environment of the company of the industry sector of industrial processing machinery is an important and developing industry, world and EU-wide. The German position in the world market is strong and the region of Münsterland is a supporting and positive environment for the case company. The workforce consists of skilled, loyal workers with competence and engagement, but they also lack openness to new ideas and miss additional language skills. Due to the positive surrounding conditions, the stakeholders have a positive and supportive attitude to the research project, which was also discussed previously in 3.4.4 - Stakeholders and their interests in the research project.

One of the first steps of the research project was the mutually agreed definition of the purpose of the research project, which is discussed and documented in the next section of this thesis.

4.2.3 Development of research objectives

Several discussions, meetings, and workshops with the University supervisor and the two owner brothers, the senior owner, and the managers of the case company were necessary to develop the refined research proposal that was presented at the ethics committee of the University of Bradford – the approval of the ethics committee was confirmed on 29.04.2016. The challenge of this phase of the research project was the consideration of all relevant roles and interests without siding with one group of stakeholders. The role of the researcher, the university supervisor, and especially the confidentiality and discretion of all gathered data were discussed and agreed in this meetings. The aim of these meetings was to break down potential boundaries and biases between researchers and participants and to create a sustaining successful partnership for the research project. Merton (1973) stated that a trustful relationship between researchers and participants often means reaching across racial, ethnic, and economic divides, among others. Thus, it is important for researchers to reflect upon the identities and "status sets" (Merton, 1973) that they bring to a research project, the ways in which those identities may affect the development of partnerships with organisation members, and how they may affect the research process and its outcomes (Kerstetter, 2012).

Involved participants	**Status set in Hidden Champion**	**Role set in research project**
Senior owner	Retired managing director and shareholder of the Hidden Champion	Sponsor / mentor in the research project - supporting the research project
2 owner brothers	The two sons of the former owner and founder of the company - following the footsteps of the father - vital involvement in project	Managing directors and shareholders of the Hidden Champion - contact person in the project

Involved participants	Status set in Hidden Champion	Role set in research project
Heads of departments	Involved regarding their departments and in general questions of financial and non-financial performance - committed to positive company development	Heads of departments - supplying relevant information in the project
Employees	Rarely involved in the research project - interested in participation	Employees - providing information
Researcher	Outside researcher - vital interest in success of the research project - former management consultant (with internal knowledge)	Researcher and project manager of research project

Table 28- Status and role set of involved participants
(Adapted from (Merton, 1973, Kerstetter, 2012))

The result of this clarifying meetings were a good, open and relationship and partnership between all participants in the research project. The formulation of the research objectives was, essentially, an issue of intense communication, discussion, and finally the democratic formulation of mutually agreeable research objectives.

The senior owner had over 30 years of practical experience leading the case company and, had also in the past developed a small regional acting company to a worldwide acting Hidden Champion. He had his own ideas for developing the company and it was difficult to convince the senior owner of the common path and the Action Research Design. He had arguments like *“If we have an idea what to do - then let´s do it… I don´t feel confident with the discussion of all these small subjects with so many people. I see the argument of improved acceptance - but I am sceptical regarding the investment of time and effort* This argument was countered by the researcher who had prior positive experiences in his role as a consultant. The past consultancy project was implemented on time and successfully evaluated by all employees. It

was agreed that the researcher would monitor the project's progress and intervene if necessary. Another important and critical role in these discussions involved the researcher's university supervisor, who had limited understanding of the practical problems of the case company. The university supervisor was an expert in Human Resources and wanted to influence the discussion in this direction, especially in the first phase of the research project where he tried to turn the project more and more towards the direction of human resources development. His argument was that *"performance is made by people. Improvement of financial and non-financial performance should start at on the people's level by performance appraisals, personnel development and training programs."* This was valuable input in the various discussions in the case company, but no emphasis was put on the subject. The university supervisor was invited to participate in the staff work and evaluation conferences in action research cycles 1 and 2, in order to improve mutual understanding and involvement of the Action Research project.

The two owner brothers formulated the pressure to generate quick wins, on the one hand, but also saw the concerns of their father regarding the usage of resources in the research project. They *"wanted to be fully involved in the research project, to answer at any time upcoming questions regarding the progress of the research project."* These concerns and interests were covered through project controlling activities, status reports, and regular meetings of the steering committee of the research project.

The researcher had his own interests in developing a model for improvement of the financial and non-financial performance in a Hidden Champion, in addition to gaining experience in these kinds of projects. Merging all interests was difficult and only possible through a democratic negotiation process of explanation and communication with all stakeholders. The situational choice of the roles as researcher and management consultant were very helpful in this phase. The management consultant acts with a, more-or-less, supervisory responsibility with specialized management consulting expertise. The Action Researcher acts as change manager, coach, or sponsor, helping all levels of managers and supervisors to work on their organisational issue.

The consultancy role was helpful in speeding up some discussions and decisions, while the researcher's role was helpful in listening closely and adjusting the content, and documenting the progress, findings, and results of the research project. It was important for the researcher at this stage of the research project to agree with the case company on the cooperative development of a mutual approach of Performance Management and not to "buy" a pre-defined and already validated consulting concept for the addressed problem.

The results of the discussions were the mutually agreed research objectives which fulfil the interests of the company of improving financial and non-financial performance, in addition to the development of knowledge, which addresses the identified gap in the theory pertaining to Performance Management in SMEs and Hidden Champions. The agreed research objectives were:

- The design of a Performance Management approach for a German Hidden Champion in the special purpose machinery manufacturing industry as an aid to improving its financial and non-financial performance,

- The implementation and validation of this Performance Management approach using Action Research Design,

- The reflection on the results of the implementation in Action Research Design for other Hidden Champions and SMEs.

The next sections are structured into the four subdivisions of the Action Research cycles, starting with the diagnosis and the identification of the problem, followed by the planning of actions to be executed because of the diagnosed problem, then taking action, and finally the evaluation of the cycle. Additionally, the learning and reflection of the outcomes from each of the cycles performed in the project are described.

4.3 First Action Research cycle

Dates:	May 2016 – November 2016
Participants:	Senior owner, 2 brother owner, senior manager, heads of departments (11), supervisor of research project, external independent, researcher.
Data collection:	Metaplan results of workshops Field notes Transcripts Business documents Internal data of the Hidden Champion Presentations Monthly log report of the researcher

Table 29 - Definition of first Action Research cycle

This section describes the steps of putting the first Action Research cycle into practice and outlines the activities that were performed. The aim of this first Action Research cycle was to design and begin to implement the Performance Management System for the Hidden Champion. Following the Action Research Design, outlined in 3.11 Summary: Action Research Design, a facilitative approach with the integration of all the important parties involved is needed. The reason for this is to tease out as many different facets of financial and non-financial performance improvement as possible. The planned and pre-discussed procedures of the first action research cycle and the brief project plan were presented and discussed with the senior owner, the 2 owner brothers, and managers of the Hidden Champion. The project plan for this phase was concretised and agreed.

The different perspectives on financial and non-financial performance and Performance Management of the stakeholders, and the perceived performance level and improvement potential were the starting point of this phase in the research project. In the beginning, an analysis of the used performance information and Performance Management instruments, such as actual collected data, KPIs, income statement (profit and loss statement) and

balance sheet, communication about performance evaluation, external perspectives, like information about market developments and competitors, company vision and objectives, incentive systems and performance appraisals, was performed. As a result of the first Action Research cycle, a tailored Performance Management approach was developed, including an implementation plan. Following the theory set out in the literature review regarding performance and Performance Management (see 2.12 Summary: Performance management in Hidden Champions), a tailored company strategy and a company specific balanced scorecard, including strategy maps, were developed.

The role of the researcher in this first action research cycle was to analyse the actual situation in a joint process and to bring knowledge of financial and non-financial performance and Performance Management to the Hidden Champion. Based on the results of the literature review, a tailored Performance Management approach was developed in this first action research cycle.

The nature of the work in this phase of the research project varied from facilitating process mapping and analysis workshops, setting up progress meetings, attending project meetings, and giving presentations. The researcher acted more as a facilitator to draw the project team members together. The data generated in this phase of the research project was in the form of written records of meetings and workshop reports, including process maps, meeting notes and records of what happened in the implementation process and its results, and a researcher's diary and monthly log record - containing both factual information and the researcher's perceptions of events. This method of recording was important because it serves the research objectives by capturing both the "hard" data, of actual process times, man-hours, materials ,and costs, relating to the process targets (e. g. time, cost, manpower), and the "soft" data from which theory can be induced.

This first Action Research cycle had a length of approximately seven months, starting in May 2016 with a presentation of the prepared project plan in a management team meeting.

4.3.1 Diagnosing

Phase of research project:	Action Research cycle I – Diagnosis phase	**Date:**	May 2016
Participants	Senior owner, Owner brothers 1 and 2 Senior manager, heads of departments (11) Researcher		
Activities:		**Data collected:**	
Meetings with senior owner, two brother owners, managers Interviews with owner and managers Presentation / discussion of results Cause and effect analysis Workshops with management team Feedback meeting with owner and manager Monthly log book		Meeting minutes, field notes Audio recordings, coding, Presentations Cause and effect analysis Presentation, meeting minutes, field notes, transcripts Records in logbook	

Table 30 - Action Research cycle I - Diagnosis phase

The aim of the diagnosis phase, summarised in table 30, was to perform a cooperative analysis of the initial situation. A mutual understanding of the initial situation with a direction of development, which is jointly agreed, is an important precondition for an accepted action plan for the next phases of the Action Research cycles. The aim of the diagnosis phase was to elaborate and diagnose the actual perception and interpretation of financial and non-financial performance in the Hidden Champion. The findings were analysed, presented, and discussed. A cause and effect analysis was performed to identify the root causes and effective measures of implementing the Performance Management System in the case company. In this phase, a common understanding of the initial situation of the Hidden Champion and the primary source of causes, obstacles, and barriers for financial and non-financial performance improvements and the design of the Performance Management approach were analysed. In the diagnosis phase, semi-structured interviews

with the senior owner, the two brother owners, and 11 heads of departments of the Hidden Champion were conducted.

The list of topics of the interviews were developed by the researcher and were based on the generic definition of performance (see 2.6 Definition of performance), Performance Management (2.7 Definition of Performance Management), and SME and Hidden Champion characteristics (2.2 Characteristics of Small and Medium sized Enterprises (SMEs) and 2.3 Characteristics of Hidden Champions), and included the following subjects:

- Evaluation of actual performance of the Hidden Champion / own department
- Perception of performance evaluation of the Hidden Champion / own department
- Actual collected data and evaluated KPIs, both general and specific
- Role of the income statement (profit and loss statement) and balance sheet in performance evaluation / communication about performance in the Hidden Champion
- Information about market developments and competitors / external perspective
- Information to evaluate performance from departments – internal perspective
- Interval and organisation of performance evaluation, both general and specific
- Integrated persons / colleagues in performance evaluation
- Internal / external source of data for performance evaluation / benchmarking
- Role / Usage of incentive systems in the Hidden Champion
- Usage of individual performance appraisal

The interviews were transcribed, coded, and presented in the form of a quantitative analysis using the software NVivo. The codes were generated and refined during the inductive analysis of the interview data, and the occurrences

of the codes were counted and refined in several steps during the analysis. An example of the generated codes from the interviews is shown in the next table:

Transcription from the interview with the senior owner (27.05.2016)		
Original interview in German	**Translation into English**	**Code**
Da haben wir schon einiges an Kennzahlen. Jedoch sind diese nicht transparent für die verschiedenen Projektphasen.	We already have several KPIs, but they do not contain sufficient transparency for the various phases of the project.	Transparency in all phases of project management missing
Ich schaue mir z.B. die Daten der BWA und Bilanz an - jedoch fehlen Kennzahlen aus den verschiedenen Abteilungen.	For instance, when I analyse the data on the income statement and the balance sheet, I see that some KPIs from the various departments are missing.	KPIs and reports missing on all levels

Table 31 - Interview data and coding process

In total, 14 semi-structured interviews with the senior owner, the 2 owner brothers, and the heads of departments were performed, transcribed, coded, and analysed. Table 32 - Results of the interviews in diagnosis phase shows the generated codes from the texts and the result of the analysis.

Code	Number
Transparency in all phases of project management missing	115
Available data from sales inadequate	93
KPIs and reports missing on all levels	85
Lack of human resources, insufficient qualified, difficult to control	83
Controlling tool priority is “project deadline”	75
Management bases on intuition and experience	52
Management tools are effort and working hours	44
Financial ratios were analysed	37
No market transparency for the company	24
Meetings and personal exchange of information are performed on a regular basis	23
Leadership and strategy have minor importance	20
Internal perspective – flexible project management	20
Innovation and improvements have minor importance	13
Customer orientation and satisfaction are most important	9

Table 32 - Results of the interviews in diagnosis phase

In a feedback meeting with the owners and managers, the results of the data analysis were presented and discussed. The management team and the department managers agreed with the result and discussed some subjects, like “transparency missing” and “inadequate data from sales”, in detail. It was interesting to observe that the individual perception of the company converged and a mutual “picture” of the situation emerged, which brought urgency and motivation for change. As a metaphor, the following figure was shown in the feedback workshop with the management team of the Hidden Champion. Everybody saw different parts of the problem but nobody saw the whole elephant (the whole picture) like it is illustrated in the next figure, according to the ancient Indian parable of the six blind men and an elephant (Wikipedia, 2017). Each blind man feels a different part of the elephant’s body and describes their partial experience in complete disagreement with the other six men and comes to suspect that each other person is dishonest. The moral of the parable is that humans have a tendency to project their partial experiences as the whole truth and ignore other people's partial experiences. One

should consider that one may be partially right and may have partial information, like the different perception of the same problem, and that we are all talking about the same elephant, only from different perspectives.

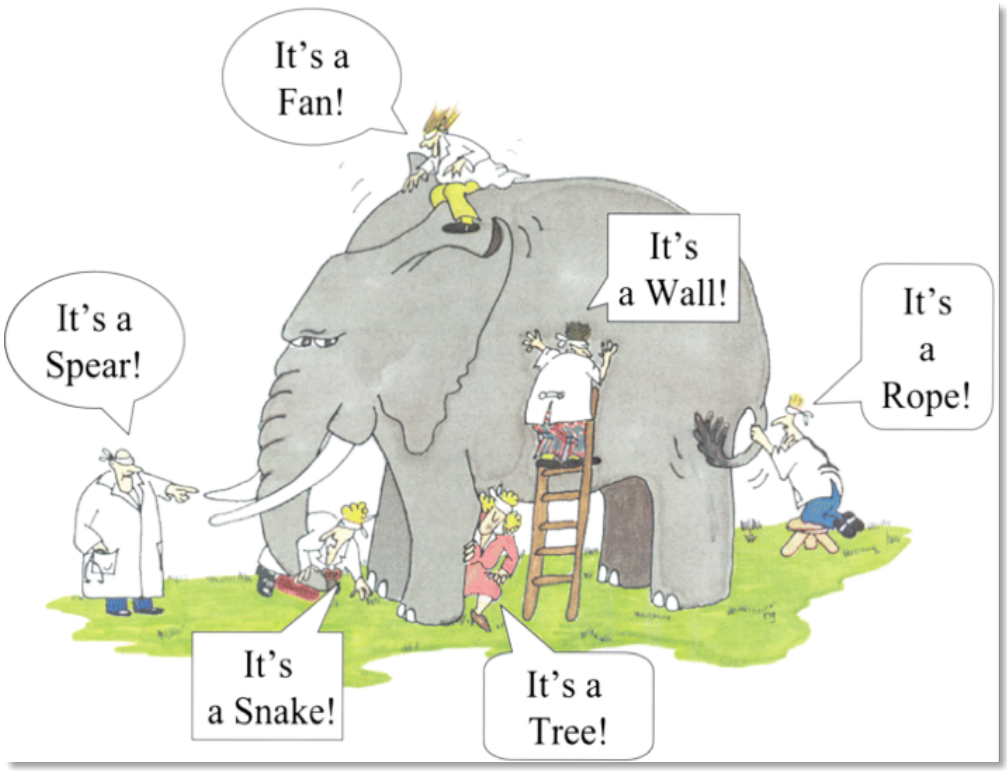


Table 33 - Ancient parable of the six blind men and the elephant

This old Indian parable helped the management team a great deal in understanding the process of analysis from different perspectives of the same problem, as well as understanding the cause and effect analysis, it also provided insights on the effect of the different measures. One quote from the head of the mechanical department was: *"This picture illustrates our problems very well. I sometimes felt in the past, that I experienced a totally different part of the elephant - and had the impression that nobody understood my issues and problems. The elephant metaphor explains this very well and the insight is, that we all work on different parts of the same elephant."*

The summary of the discussion of the cause and effect relationships led to six main topics and areas of improvement. The results of the feedback workshop are shown in Table 34 - Result of the feedback meeting of interviews:

Codes (from interviews)	Main topic (from discussion)
Transparency in all phases of project management missing	Missing transparency – lack of information
Available data from sales inadequate	
KPIs and reports missing on all levels	
Lack of human resources, insufficient qualified, difficult to control	Lack of resources – difficulties in management based of complexity
Controlling tool is project deadline	
Management bases on intuition and experience	
Management tools are effort and “working hours”	
Internal financial ratios are analysed	Evaluation is done as navel-gazing
No market transparency for the company	
Meetings and personal exchange of information are performed on a regular basis	Compensation of missing information through meetings
Leadership and strategy have minor importance	Unclear strategy and direction – navel-gazing in all departments
Internal perspective – flexible project management	
Innovation and improvements have minor importance	Customer and project orientation versus innovation
Customer orientation and satisfaction are most important	

Table 34 - Result of the feedback meeting of interviews

The results of this interview analysis were that general SME characteristics and weak points also applied to the Hidden Champion in the research project. The major topic was missing transparency as result of missing data and unstructured communication and information sharing in the Hidden Champion. In combination with a lack of resources, the management problem of unclear priorities arises. It is not clear which problem has the greatest influence and should be addressed first in day-to-day business. This results in detail optimisation (navel gazing) in the departments without seeing the big

picture of the Hidden Champion. Focus is on customer and project orientation leading to short term orientation. The performance strategy is unclear, and leadership is missing leading to a lack of long-term orientation.

In addition to the feedback workshop, a cause and effect analysis was performed to identify causes and effects. The analysis followed the Cause and Effect Analysis technique of Professor Kaoru Ishikawa, created in the 1960s. The technique uses a diagram-based approach for thinking in order to identify major possible causes of a problem and implement effective measures. The cause and effect analysis was briefly prepared by the researcher. In a subsequent workshop with the senior owner, the two owner brothers, and the heads of departments, the potential cause-effect relationship of every item / code of the interview codes was marked with an arrow. The arrows show the direction of the presumed cause-effect relationships. Figure 18 shows one item/part of the cause-effect analysis as an example:

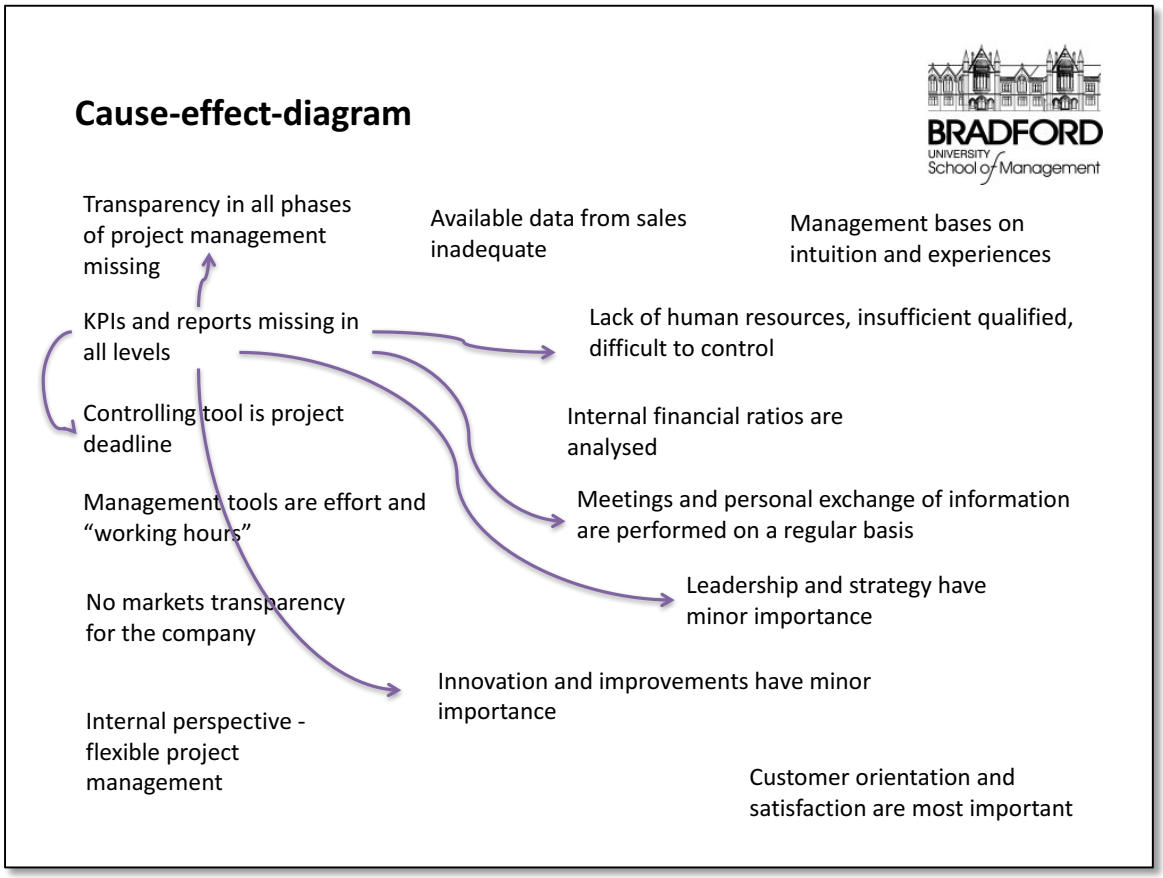


Figure 17 - Example of cause and effect analysis

This procedure uncovers the unconscious, and mostly ignored, relationships of the causes and their potential effects and gives the opportunity to identify major causes of a given problem. This allows the implementation of efficient measures for the causes, which likely also influence the identified positive effects positive. In the above figure, the item “KPIs and reports missing in all levels” was identified as a cause for some effects, e.g. “Transparency missing in all phases of project management” and “Controlling tool is project deadline”. This means that the implementation of a measure regarding the cause “KPIs and reports missing in all levels”, e.g. the definition and implementation of department KPIs, also improves the transparency in the company and the available controlling information. Measures on causes work “to kill two birds with one stone”. Figure 18 - Cause and effect analysis final map shows the result of the root-cause analysis:

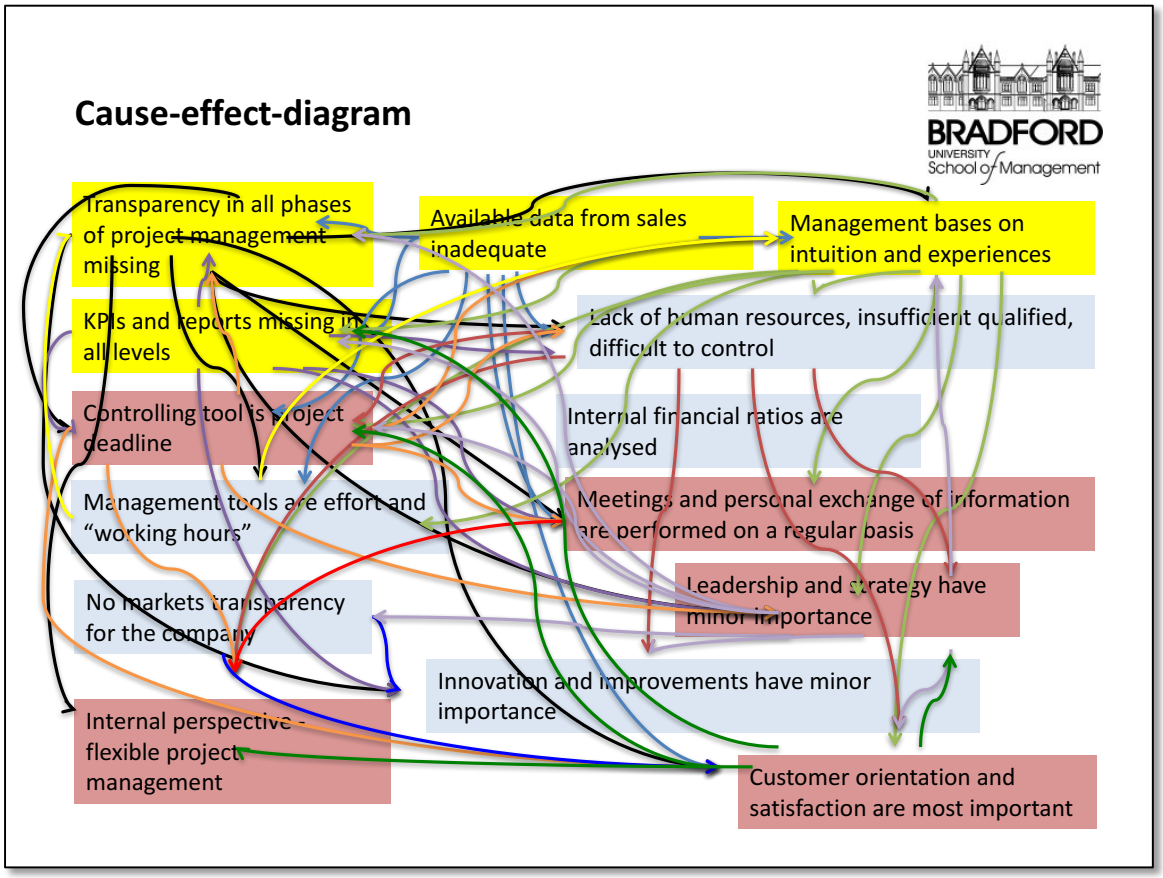


Figure 18 - Cause and effect analysis final map

The major roots are marked yellow, major causes are marked red, and neutral items are marked grey. Major roots and effects are:

Major roots:	Major effects:
- Transparency in all phases of project management missing - Available data from sales inadequate - KPIs and reports missing on all levels - Management bases on intuition and experience	- Controlling tool is project deadline - Meetings and personal exchange of information are performed on a regular basis - Leadership and strategy have minor importance - Internal perspective – flexible project management - Customer orientation and satisfaction are most important

Table 35 - Results of cause and effect analysis

Completing the analysis for all items results in the map shown in Table 35 - Results of cause and effect analysis. The result of the cause and effect analysis show four important causes of the initial situation of the company. The owner and managers of the Hidden Champion want to see more transparency regarding the progress of customer projects and the performance of the company and the departments. Additionally, they would like to get more information from the sales engineers and improve their leadership, based on intuition and experience, due to missing transparency and information. In other words, the positive effect of performance Management for the case company will occur through improved transparency by increasing the availability of KPIs on all levels with the effect of informed management and resource allocation decisions.

The above analysis is based on the interviews conducted with the participants of the Hidden Champion and identified company specific measures for performance improvements. The literature review, in 2.2 Characteristics of Small and Medium sized Enterprises (SMEs) and 2.3 - Characteristics of Hidden Champions, identified, in contrast, the generic characteristics of

SMEs and Hidden Champions and especially the barriers to implementing Performance Management in SMEs.

Part of the diagnosis phase was the discussion of the generic barriers and weaknesses of SMEs with the reflection on whether or not these aspects appear in the case Hidden Champion. The predominant view of the senior manager, the two owner brothers, and the heads of departments pertaining to the case company was that: *“We are different from any other company. Our weaknesses and problems are unique.”*

In the workshop, the researcher presented the results of the literature review regarding the generic characteristics of an SME. Subsequently, the senior owner, the two owner brothers, and managers of the case Hidden Champion discussed these subjects and came to the result, that all characteristics including the barriers regarding advanced managerial practices appear in the case company. The results of the reflective discussion in the workshop are shown in Table 36 - Appearance of SME characteristics in the case .

SME characteristics	Barriers to the implementation of advanced managerial practices
Short-term priorities, flexibility, and less formal procedures	Lack of planning and structure, ineffective procedures, improvisation versus organisation
Internal operational focus and lack of external orientation	Focus on internal processes, ineffective external communication, lack of market knowledge and developments, lack of customer feedback systems
Learning by doing, tacit knowledge	Lack of education and training, underdeveloped measurement of processes
Lack of managerial skills and career development	Lack of leadership style, lack of knowledge, fear / resistance to change
Owner orientation, command, and control culture	Lack of top management commitment for PM, no proper vision, fear of bureaucratisation
Limited resources	Inadequate resources, lack of time, financial and human resources

Table 36 - Appearance of SME characteristics in the case HC

Table 36 - Appearance of SME characteristics in the case highlights all the SME characteristics found in the case Hidden Champion. The case company is a typical SME and all weaknesses appear in the case company, as in most other SMEs. The senior owner, two owner brothers, and the heads of departments were surprised about the result. The second owner brother said in the meeting: *"I was surprised to learn that our problems and weaknesses are ordinary."* The following discussion with the senior owner, the two owner brothers, and the managers was very fruitful and led to awareness and openness in the discussion about the developed generic strategy map from the literature review.

The developed strategy map was presented by the researcher in detail in the meeting, including an explanation of the underlying SME and Hidden Champion characteristics. The proposed strategy map was discussed and the

components were critically assessed by the participants who were present in the company. The strategy and leadership perspective includes, for example, the aspect of “unique product and 1-product-strategy” from the HC characteristics. The case company specialised in vacuum casting and impregnation special purpose machinery. This was identified by the participants as a strength of the case company and was marked as a strength with a green label. Meanwhile, the aspect of “clear and ambitious goals”, for example, was evaluated as an opportunity for improvement (yellow label) because the general management agrees on common goals but these are sometimes too ambitious, or are not ambitious enough. The participants of the meeting discussed and agreed on possible improvements, especially the use of KPIs for goals. As a third example, the aspect of “external orientation of strategy” was marked with a red label as it was considered a clear weakness. The company strategy was formulated without any external collected data, like market information. Figure 19 - Evaluation of generic strategy map in the case showed the results of the discussion in the meeting.

The relevant insights of the discussion were that the company strategy and the leadership style needed to be improved in the case Hidden Champion. The participants especially discussed the aspects that were weaknesses (red) or opportunities for improvement (yellow), such as “Leadership authoritarian and participative”, “Clear cut competitive strategy”, and “External orientation of strategy”. This means having a clear-cut, well formulated and communicated strategy for the company, including external (market and competitor) information, which is binding for all employees. The leadership aspect means being authoritarian regarding the company strategy, but also practising a participative leadership style in the realisation of activities and measures, as Hidden Champions usually do. The aspects were marked as weaknesses (red) due to the absence of a formulated company strategy, strategy implementation processes, and a leadership style based on agreed goals.

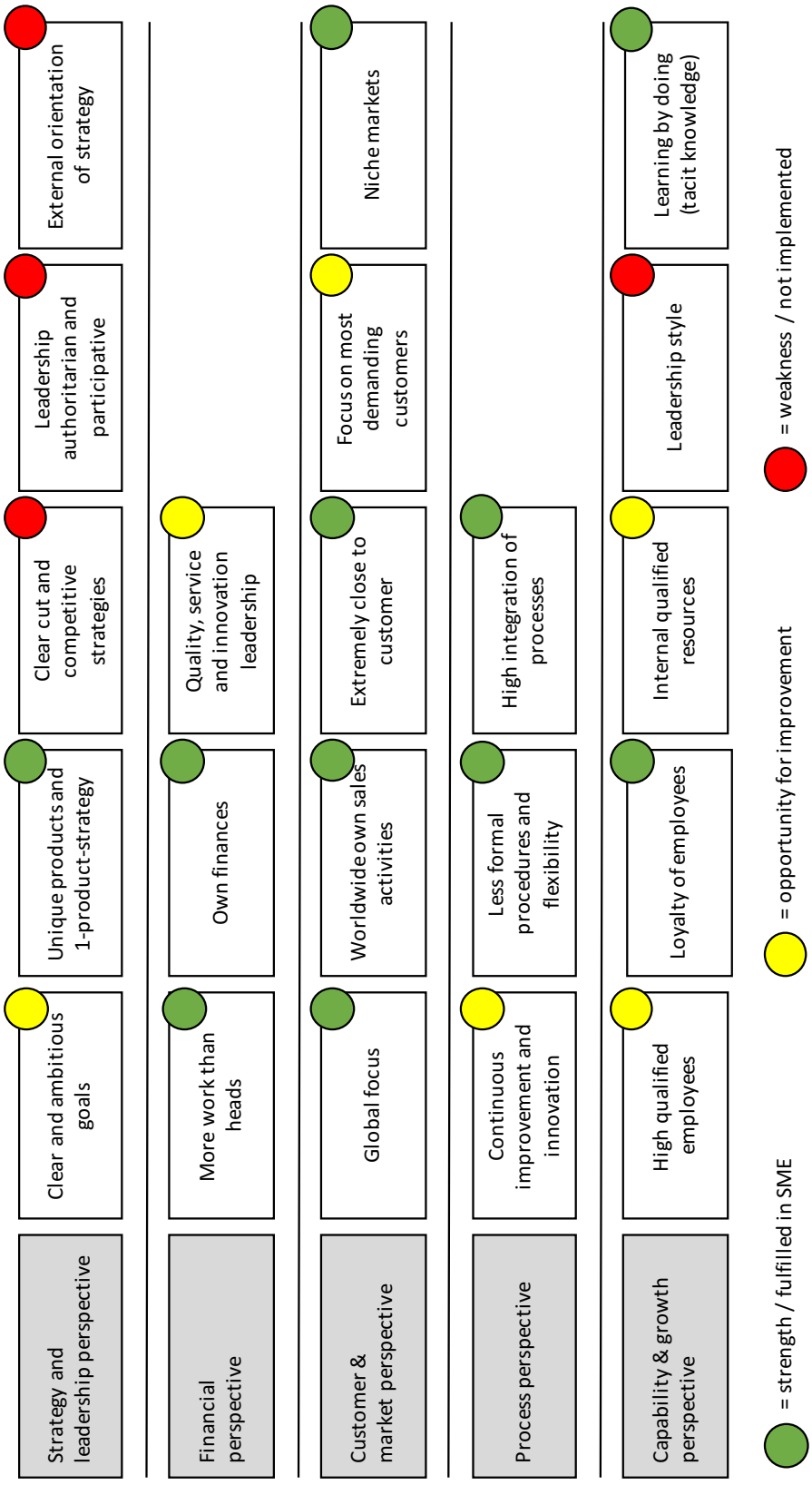


Figure 19 - Evaluation of generic strategy map in the case HC

The participants in the meeting came to the conclusion that the proposed strategy map from the literature pictured in a comprehensive manner the different aspects for the formulation of a strategy to improve the financial and non-financial performance of the case company. The strategy map was validated without changes by the participants. They agreed that most of the SME characteristics, like lack of resources, lack of managerial competence, and short-term orientation, can be interpreted as weaknesses compared to larger companies, while other SME characteristics, like flexibility and customer orientation, can be interpreted as strengths. Hidden Champion characteristics are formulated as strengths. The proposed strategy was to minimise the negative effects of the SME characteristics through focusing on Hidden Champion characteristics. To accomplish this, it is essential to focus on the aspect of “external orientation” and to work on an improved “leadership style”, in particular the decision making processes and the allocation of resources. This approach should also enable further differentiation from competitors and the support of sustainable long-term development of the case Hidden Champion.

The participants of the workshops also discussed their interpretation of performance. The researcher presented the results from the literature review (see 2.6 - Definition of performance) and asked the participants of the workshop about their individual interpretation of performance. The results of the discussion were classified according to the three parts of the performance definition: effectiveness, efficiency, and perception of performance:

Dimension / perspective	Definition form the participants of the workshop
Efficiency	Financial KPIs, revenue, contribution margin, balance sheet, income sheet, cash position,
Effectiveness	Customer satisfaction, no complaints, customer relationship, number of customer contacts, utilisation, Non-financial KPIs, throughput, completed tasks
Perception of performance	Work results, reliability, satisfaction with work, quality of teamwork, fun at work, perceived independence, fulfilment of tasks, flexibility

Table 37 - Definition of performance in the case company

The results of the discussion in the workshop showed that the company individual definition follows the interpretivist definition of Gray (2015). Table 37 presented the different perspectives of the stakeholders of the case company. The salient, rated most important, aspect of performance was the financial perspective of performance - meaning efficiency. However, the discussion of the practitioners in the workshop uncovered the importance of the other perspectives, especially the individual perception of performance. The conclusion of the discussion was that the different departments have a department-specific definition of performance and consequently have a different focus in their performance evaluation.

The diagnosis phase concluded with a report of the conducted analysis and the result of the discussion with the senior owner, the two owner brothers, and managers of the Hidden Champion. At the end of the diagnosis phase, the necessity of developing and implementing an SME and HC specific, tailored Performance Management approach for the Hidden Champion was confirmed. In this phase of the research project, the senior owner concluded: *“I would like to come back to the metaphor with the six blind men and the elephant. This analysis of the interviews and the information of the generic SME and Hidden Champion characteristics opened my eyes and offered a lot of insights. I see our elephant now - and understand how we can speed up “the elephant” for the future.”*

4.3.2 Planning

Phase of research project:	Action Research cycle I Planning phase	**Date:**	June 2016
Participants	Senior owner, Owner brothers 1 and 2 Senior manager, heads of departments (7) Researcher		
Activities:		**Data collected:**	
Workshop for the action plan Developing a plan for the taking action phase Meetings to discuss action plan Monthly log book		Field notes, metaplan notes, action plan, minutes of meetings, Records in logbook	

Table 38 - Action Research cycle I - Planning phase

In the planning phase, a detailed project plan was created on the basis of the results from the diagnosis phase. The first Action Research cycle was intended to design the Performance Management approach for the case company following the developed strategy map for Hidden Champions (see 2.12 Summary: Performance management in Hidden Champions and Figure 9 - Generic strategy map for Hidden Champions and SME). The following tasks were identified and prioritised by the project team:

- Definition of company strategy to ensure alignment in the organisation
- Improving communication about customer project progress – especially with sales engineers
- Identifying used KPIs and desired KPIs (to gain transparency)
- Considering the limited resources in the Hidden Champion and designing a feasible approach (IT support with business intelligence tool and no usage of excel sheets)
- Finding suitable business intelligence tools to support KPI generation

The developed plan of the first Action Research cycle focuses on a first step of Performance Management design and implementation to address the research objectives. A cross-functional team was formed to design the project

plan, which included the senior owner, 2 brother owners, department heads, and the researcher. A project plan and list of actions were developed by the project team based on resource availability. The focus of the actions was on strategy and transparency to pick up possible “quick wins” from issues addressed in the diagnosis phase, especially the cause and effect analysis.

Table 39 summarises the action plan developed and agreed by the project team for the first taking action phase in the research project.

Actions / Tasks	Participants	Deliverables	Date
Developing company strategy	Senior owner, 2 owner brothers	Company strategy, Company KPIs	06.2016
Analysis of income statement and balance sheet	2 owner brothers	Excel table with financial figures and benchmarks	07.2016
Workshops to improve communication and management style	Senior owner, 2 owner brothers, and heads of departments	Strategy for improved communication	07.+08. 2016
Meetings with heads of departments regarding currently used / desired KPIs	2 owner brothers, heads of departments	Department KPIs	08.+09. 2016
Research on business intelligence tool	2 owner brothers, head of IT department	Chosen software	08.2016
Implementation of business intelligence tools	2 owner brothers, head of IT department	Effective data gathering, analysis	09.+10. 2016

Table 39 - Actions plannned in the first Action Research cycle

The aim of the action plan was to formulate the company strategy for the case company as a basis for the development of department strategies, including the definition of company and department KPIs to measure the strategy realisation. The analysis of the income statement and the balance sheet

was the first step to break down derived KPIs for the departments. Efficiency in data gathering and analysis was planned through the implementation of the BI tool. The next section describes the taking action phase and the implementation of the first Action Research cycle.

4.3.3 Taking action

Phase of research project:	AR 1 – Taking action	**Date:**	July – Oct 2016
Participants	Senior owner, Owner brothers 1 and 2, Senior manager, heads of departments (11), Researcher		
Activities:		**Data collected:**	
Developing a company strategy Analysis of income statement and balance sheet Workshops to improve communication and management style Meetings with heads of departments regarding performance (used / desired KPIs) Research on business intelligence tools Implementation of business intelligence tools Monthly log book		Meeting minutes, field notes, Audio recordings, Coding, Presentations Root-cause analysis Presentation, meeting minutes, field notes, transcripts Records in logbook	

Table 40 - Action Research cycle I - Taking action phase

Table 40 summarises the activities of the 'taking action' phase of the first Action Research cycle, as planned in the previous planning phase. The tasks in the project phase of taking action were planned by the project team as shown in the following extract of the project plan:

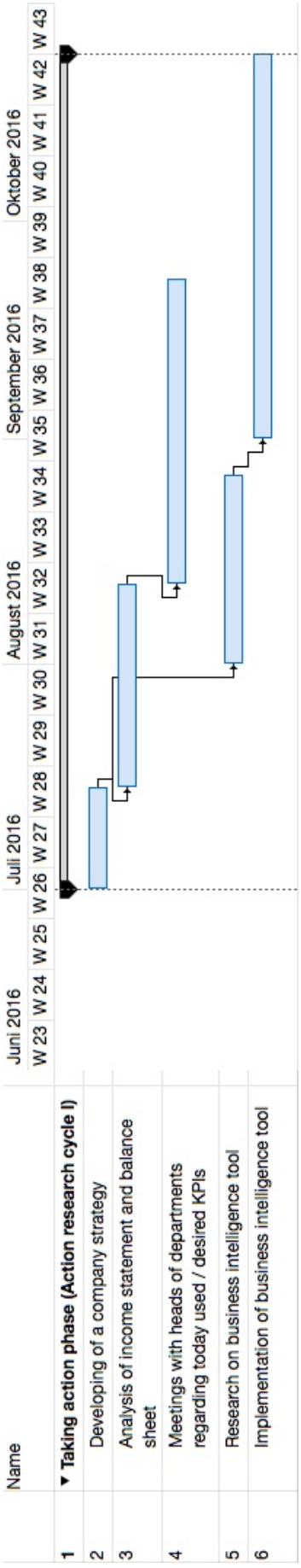


Figure 20 - Project plan of the taking action phase of AR cycle 1

The first step of activities in the ‘taking action’ phase was the development of a company strategy for the case company following the results of the diagnosis phase of the first action research cycle. One major finding was the missing transparency and lack of strategic orientation. Second, is the formulation of a company strategy - a basic requirement for the design and implementation of the Performance Management approach following the literature review on Performance Management (see 2.10 - Framework for PMS in SMEs and Hidden Champions.

The result of the diagnosis phase was the absence of transparency on all levels and that there were no financial and non-financial KPIs in the case company. The reason for this was that the senior owner developed, in the past, a simple strategy of looking at some key financial figures, like account balance and outstanding debts, for steering and managing the company. He only shared the information in the company with selected close employees. The company grew in the last few years and with it the necessity for transparent figures on all levels. The project team prioritised the reworking of the “old” procedure and analysis of financial figures as an important task to gain transparency, which is explained in 4.3.3.2 - Analysis of income statement and balance sheet. This task

was followed by interviews and meetings with the different heads of departments in the Hidden Champion. The currently used KPIs and the desired KPIs were the subject of the meetings and workshops. Additionally, the project team discussed and decided to support the data collection with an appropriate business intelligence software tool to avoid the need to keeping extensive Excel sheets. The basic idea was to find such a tool in August 2016 and implement the software in September 2016. The following subsections describe in detail the procedure and results of the taking action phase of Action Research cycle I.

4.3.3.1 Development of a company strategy

The workshops and meetings to develop the company strategy were performed beginning July 2016 with the senior owner and the two owner brothers of the Hidden Champion. In total three meetings took place during a period of four weeks to develop the company's strategy. The strategy definition of the Hidden Champion started with the discussion of the results of the analysis of the initial situation in comparison with generic SME advantages and weaknesses and the general characteristics of Hidden Champions. The strategy map for SMEs and Hidden Champions (see 2.12 Summary: Performance management in Hidden Champions and Figure 9 - Generic strategy map for Hidden Champions and SME) was used to identify strategic objectives and fields of action for the Hidden Champion to strengthen the market position and sustainable development of the company.

In the first two meetings, the Hidden Champion strategy was developed in draft by the senior owner and brother owner II, this is because brother owner I was responsible for worldwide sales activities and was, therefore, travelling extensively. In the third meeting, the strategy was presented to owner brother I and discussed. The resulting changes from this meeting are marked in blue in the strategy mind map.

The company strategy was formulated following a commonly used strategy in German-speaking countries – The St. Galler strategy approach of normative,

strategic, and operational management and the differentiation in mission, vision, and corporate core competencies. The “St. Galler Management Modell” was developed in the 1960s at the University of St. Gallen in Switzerland by Hans Ulrich, who published the literature of systems theory and the theory of systems management in business. This is a well-known theory in German-speaking countries - latest literature was published by Rüegg-Stürm and Grand (2015) (Rüegg-Stürm and Grand, 2015). Based on the corporate mission and vision of the general management and further normative directives, strategic fields of business were identified for the Hidden Champion. The definition of the mission means the “reason for existence” of the company and includes the benefit for other companies. The general management of the case Hidden Champion defined the mission as being closely related to the change of production technology in other industry sectors, like wind power or electronic industry. This means a paradigm change in production using an innovative combination of chemical processes and mechanical production technology.

A mission of a company should generally be based on core competencies or unique selling propositions, which are unique and difficult for competitors to copy. The core competency of the case company is the process technology of difficult resins and hardeners for casting electronic products under a vacuum. The company has developed several innovative and novel production technologies, e.g. for handling abrasive products, resins with high viscosity under ambient temperature, and inline preparation of resin and hardener mixtures.

The company’s corporate vision defines its strategic positioning on prospective markets and answers the question “where is the journey heading?” The management of the case company defined some interesting general and specific markets and technologies like carbon fibre and glass fibre technology, 2k vacuum 3D printing or microwave / UV hardening components. There are different industry sectors that use manual production techniques for products of these materials. Process automation brings several improvements in product quality and production cost, in addition to improved safety

and working conditions for employees handling the chemical products like resins and hardeners. As the case company is a SME, HC and family business the developed company strategy is personality-driven and influenced by the individual values and motivations by the senior owner and the two owner brothers of the family business. The SME, HC and family business characteristics were discussed and considered while formulating the company strategy of the case company.

These generic settings are usually defined as normative settings from the general management of a company. Subsequently, every department in the company then derive their departmental contributions, e.g. regarding sales activities, product development, production technology etc., and this was done as a first step in the Workshops with the heads of departments. The aim of those meetings was to formulate their derived department strategy and related KPIs.

Figure 21 - Result of definition of HC strategy shows the company mission, core competencies, and vision of the case Hidden Champion. Blue additions were the result of the third meeting with the senior owner and the two owner brothers, especially to integrate the external orientation and relevant aspects of improved leadership style. In this strategy mind map, fields of action for the Hidden Champion were addressed, such as the concentration on vacuum casting, component preparation, and resin casting technology. This mission statement, in combination with the core competencies, such as high-in-house production depth and own technology development, enables the development of new strategic business fields for production in the carbon fibre and glass fibre industry. One major output of the strategy discussion was that the case Hidden Champion identified the industry working with carbon fibre and glass fibre technology to develop a paradigm shift in production technology.

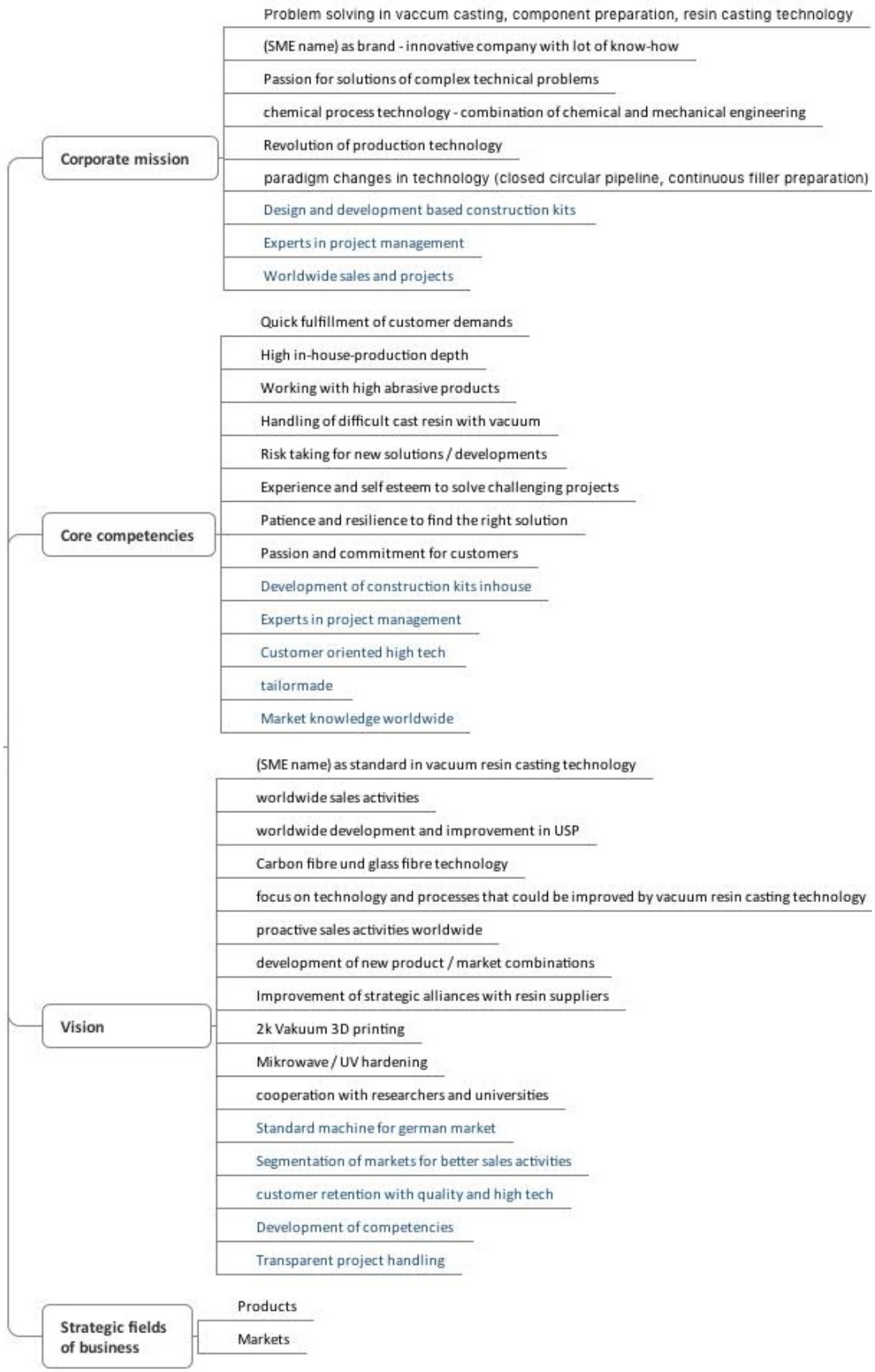


Figure 21 - Result of definition of HC strategy

4.3.3.2 Analysis of income statement and balance sheet

The second task of the project team, following the diagnosing and planning phase, was to address the lack of transparency of financial figures on all levels (income statement and balance sheet). Actually, there were only limited financial and non-financial KPIs in the case company, such as account balance and outstanding debts. In the past, the senior owner only shared the information with a few selected close employees. As the company has grown over the past few years, so has the necessity for transparent figures on all levels. Since the takeover of the company from the senior owner, owner brother II was responsible for the internal and administrative processes. Owner brother II has limited understanding of financial figures as his qualifications are as a mechanical engineer, with no economic education. This problem was addressed through meetings with the retired senior owner, owner brother 2, and the researcher. In the first meeting, an inventory of presently used KPIs was created. The nominated, and often discussed, KPIs were: bank account status, liquidity status (and planning), outstanding receivables with due dates, and working hours statistics of the departments. The senior owner commented on these figures as follows: *"I implemented these figures in the last 20 years. They show the fitness of the company on a rough level especially the expense situation compared to the revenue. I got these figures monthly and discussed them with in parts sales and production. I managed the company with these figures providing a general overview, but we grew in the last years and the figures provide not detailed evidence enough for fast and effective management decisions."*

The KPIs were taken over by the two owner brothers without critical reflection. This led to the income statement and balance sheet figures being, more or less, a closed book to them. Important information regarding the situation of the company, e.g. profitability, investment opportunities, financial woes, was therefore not identified, or identified too late. Due to the demanding day-to-day activities of the business, the two owner brothers were insufficiently engaged with the financial documents of the case company and just took over the habits of the senior owner. The problem with this was that the two owner brothers have limited experience of interpreting the financial indicators

for the business situation of the case company. This led, in 2015/2016, to an unnoticed financial loss in one of the subsidiaries through misappropriation (or one that was noticed too late). One quote from owner brother I regarding the analysis of the income statements and balance sheets was: *"I don't know exactly the meaning of the different balance sheet accounts and just compare the trend of the accounts in monthly documents. I look closer and ask my accountant if there are (larger) deviations."* Another quote was: *"There are no agreed target figures or indicators we are looking at, showing financial healthiness of our company. In the case of a problem, we analyse the problem and respond to the situation - and sometimes we react too late."*

In order to improve the understanding of owner brother I, a joint balance sheet analysis was performed by brother I, recommended by the researcher. A standard system of indicators with target figures of an external company assessment was calculated. These analyses were subsequently enlarged with meaningful internal KPIs and targets for the Hidden Champion. The analysis was done in accordance with the concept of Gräfer "Bilanzanalyse" (A well-known balance sheet and income sheet analysis concept in German-speaking countries) with updated KPIs of Gladen (2014) (Gräfer, 2001, Gladen, 2014) .

The following indicators in Table 41 - Quick check of balance sheet and income statement showing the financial stability and profitability were calculated and discussed:

Analysis section		Indicator	Calculation	2016	2015	2014	Target
financial stability	financing (capital strength)	equity ratio	= equity / total capital	109,6%	67,8%	66,4%	> 30%
	liquidity (indebtedness)	debt amortisation period in years	= (external capital - liquid assets) / cashflow	-2,48	-62,79	-0,29	< 3 J.
profitability	profitablility (rate of return)	return on total capital	= (EBT + borrowing costs) / total capital)	29,7%	9,7%	34,4%	> 15%
	income ratio (financial performance)	cashflow performance ratio	= cashflow / operating performance	57,4%	0,3%	17,6%	> 10%

Table 41 - Quick check of balance sheet and income statement

The first quick check was performed with owner brother 2 and the results of the analysis were compared with industry standards. This led to awareness of the current financial position of the case company compared to other companies. The temporary fallen profitability and income ratio in 2015 was discussed - reasons for this were problems in sales and delayed investment decisions of customers. This led to a temporary decrease in financial performance of the case company. The joint analysis of the documents was found to be very fruitful and eye-opening by owner brother II. In the analysis meeting he said: *“Now I understand our very special position and the benefit of our strategic position in the special purpose machinery manufacturing business as a Hidden Champion. I didn’t knew, that our financial figures are that positive compared to the standard figures and targets in our industry.”*

The discussion of the four KPIs extracted from the balance sheet and income statement led to a positive momentum to get more information on performance indicators compared with the different target figures of the industry. The indicators shown in Table 42 - Analysis of financial indicators - financial stability and Table 43 - Analysis of financial indicators - profitability were calculated and discussed.

Analysis section		Indicator	Calculation	Target	
financial stability	Investment	capitalisation ratio	= long-term assests / balance sheet total	> 40% industry	< 20% commercial
		depreciation ratio	= depreciation / tangible assets	> 25%	
	Financing (capital strength)	asset coverage A	= equity capital / long-term assets	> 70% industry	> 60% commercial
		asset coverage B	= (equity capital + long-term external capital) / long-term assets	> 150% industry	> 140% commercial
		working capital ratio	= working capital / short-term working capital	> 40%	
		debtor target in days	= customer recievables *365 / revenue	< 30 days	
		creditor target in days	= debts to suppliers * 365 / (use of goods + third-party services)	< 40 days	
		storage time in days	= work in progress *365 / material cost	< 120 days	
	Liquidity (indebtedness)	liquidity 3. grade	= short-term working capital / short-term external capital	> 150%	

Table 42 - Analysis of financial indicators - financial stability

Indicators of financial stability shown in Table 42 - Analysis of financial indicators - financial stability are important for a company but also indicators of profitability are important to evaluate the performance of a company (Table 43 - Analysis of financial indicators - profitability).

Analysis section		Indicator	Calculation	Target	
profitability	profitabliity (rate of return)	equity capital ratio	= profit/loss on ordinary activities / equity capital	> 30%	
		return on sales	= profit/loss on ordinary activities / operating output	> 5%	
		capital turnover	= operating output / balace sheet total	> 1,75 industry	> 2,0 commercial
		(ROI) return on investment	= profit/loss on ordinary activities / balance sheet total	> 8,75% industry	> 10% commercial
	cost structure	material intensity	= material usage / operating output	< 35%	
		contribution margin I	= contribution margin / operating output	> 65%	
		personal intensity	= personnel costs / operating output	< 25%	
		material +personnel intensity	= (material + personnel costs) / operating output	< 75%	
		external capital cost in % of the operating output	= external capital cost / operating output	< 2%	
		depreciation in % of operating output	= depreciation / operation cost	> 7% industry	<3% commercial
		break-even point	= annual fixed costs / contribution margin	< 100%	
		degree of safety	= 100 - break even point	> 10%	
	cash management	cash discounts in % of revenue	= cash discounts / revenue		
		cash discounts in % of material costs	= cash discounts / material costs		
EBT = earnings before taxes = profit from ordinary activities (EBT)					

Table 43 - Analysis of financial indicators - profitability

In the course of the workshops a lot of different KPIs were calculated and charts were produced, that demonstrate better understanding of the development of the company. The following two graphs indicate the trends of revenue and costs of material in 2014 and 2015.

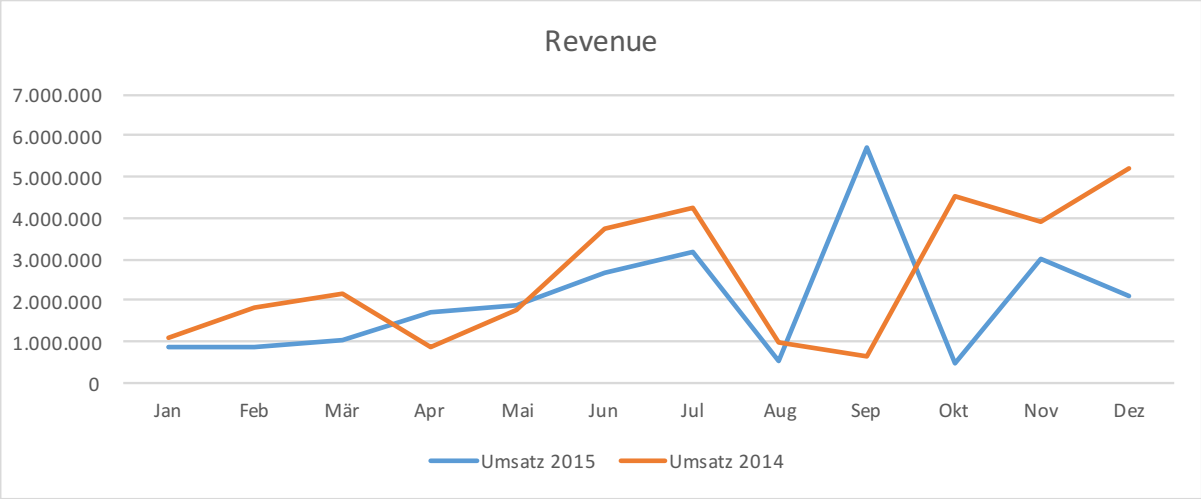


Figure 22 - Revenue of the HC in 2014 and 2015

(Umsatz = revenue)

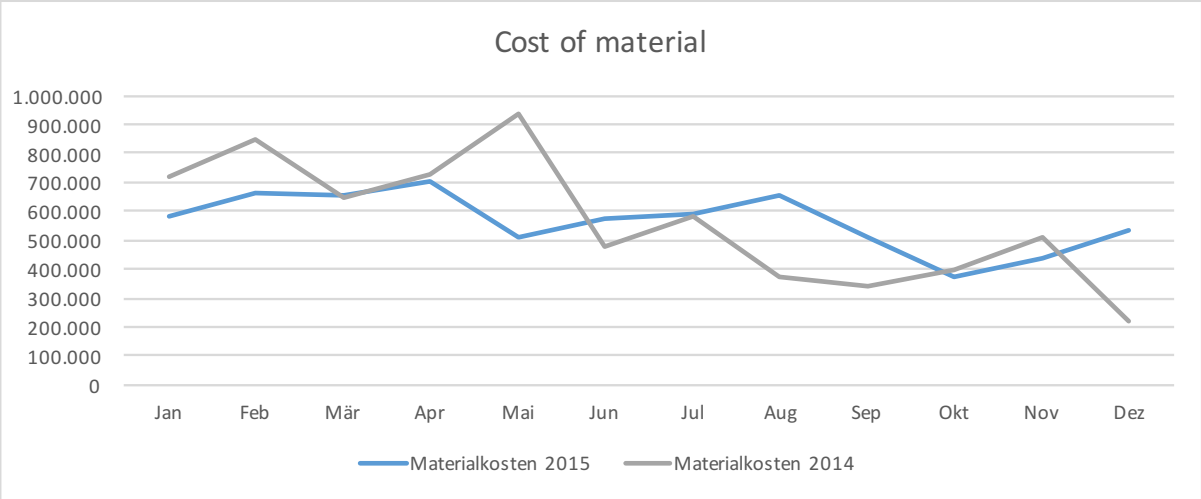


Figure 23 - Cost of material in 2014 and 2015

(Materialkosten = material cost)

The revenue in 2014 was higher than in 2015 and the simultaneous cost of material was lower in 2014 than in 2015. This led to overall weak financial figures for the year 2015 compared to 2014. The reason for this effect was that two larger projects had started in 2015, with invoicing in 2016. The delayed invoicing with a temporary decrease of financial performance is a well-

known phenomenon in the special purpose machinery manufacturing business sector, due to long completion times with prefabrication. Additionally, two important customers postponed their investment decisions for new machinery. The informed analysis of the income statement and balance sheet resulted in owner brother II gaining a better understanding of the financial statements and current developments of the company. It was interesting to see that these meetings and workshops greatly changed the awareness and consciousness of owner brother II, and generated positive momentum for the design and implementation of the Performance Management System.

In parallel with the meetings and workshops with the researcher, the analysis of the income statement and the balance sheet were presented by owner brother II in regular meetings with the house bank of the Hidden Champion and the supervisory board. He presented the results of the financial analysis, KPI definitions, and explained his insights and deepened knowledge about the financial figures. He received positive feedback from the supervisory board and the bank.

4.3.3.3 Meetings with heads of departments regarding performance

The focus of the interviews and workshops with the heads of departments was the discussion of the currently used KPIs in the departments. Based on the pre-defined strategy, draft concepts of performance measures were discussed and developed for the different departments. The concept of the tailored Performance Management approach was developed on the basis of to-date used KPIs, and the desired KPIs from the general management and the heads of departments. The interviews took place for the departments of purchasing, sales, mechanical and electrical construction and engineering, service, spare parts, production, warehouse, and the subsidiaries. In total, ten interviews were performed. The discussion began with the definition of the understanding of performance following the definition of the literature review of section 2.6 - Definition of performance. The results of the discussions were documented as department related strategy maps and KPI concepts on meta plan boards. The results were collected and presented in a concluding

large mind map showing the connection and mapping of different measures of the Hidden Champion.

The participants of the workshops were motivated and interested in showing their manner of leading the departments, especially understanding and managing performance. Their problem was that the Hidden Champion had no written and coordinated company strategy. Strategic planning was done solely by the senior owner and later by the senior owner and the two owner brothers. The results of the lack of involvement in the strategic discussion were seen in terms of short-term priorities and detail optimisation in the various departments. In the course of the interviews and workshops, the insight of a lack of common understanding of performance became apparent. It also became clear that there was no alignment of the department strategies with a long-term company strategy, even though the staff were working on the same short-term priorities in the day-to-day business. Nevertheless, the discussion was very positive. The results are presented in Figure 24 - Analysis of financial performance of the .

A performance measurement concept of the financial analysis of the Hidden Champion was developed with the general management team. Figure 24 - Analysis of financial performance of the shows the concept of the analysis of the balance sheet and the income statement used by banks and auditing companies evaluating business performance. The basis for this concept of the financial performance analysis were the books “Bilanzanalyse” by Gräfer (2001) and “Performance Measurement” by Gladen (2014) (Gräfer, 2001, Gladen, 2014)

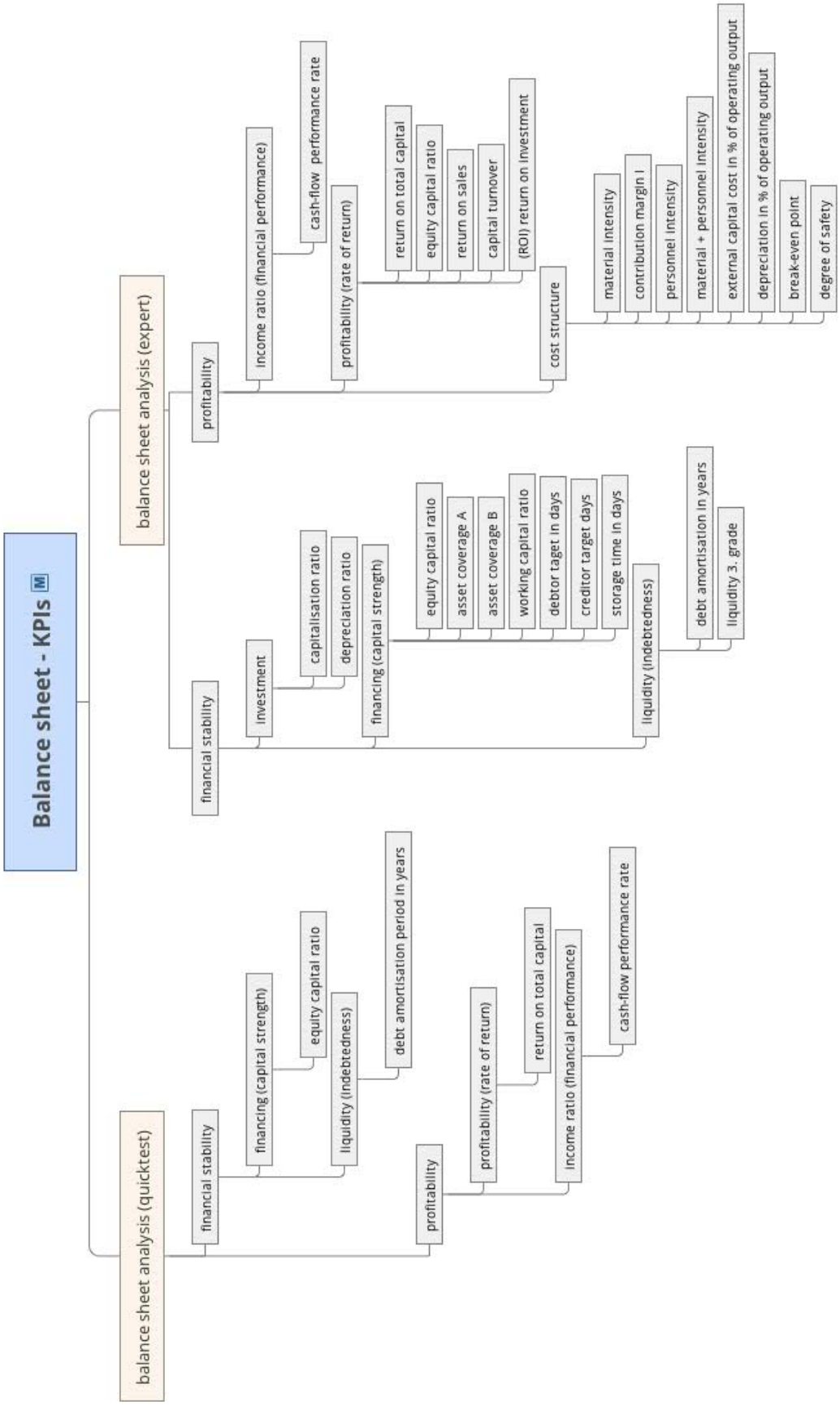


Figure 24 - Analysis of financial performance of the HC

Figure 25 - KPI development of mechanical and electrical construction shows the result of the workshops with the head of mechanical and electrical construction department regarding their definition of performance. The heads of departments understood, in that meeting, that the definition of a departmental strategy is important in terms decision making and resource allocation in the department. The departmental strategy structures and prioritises all activities in the department, e.g., the number of employees working on development or customer projects. The definition of performance of each department was discussed and formulated as shown in the yellow box of the following mind map. The financial and non-financial KPIs that are currently in place were discussed and added to the mind map.

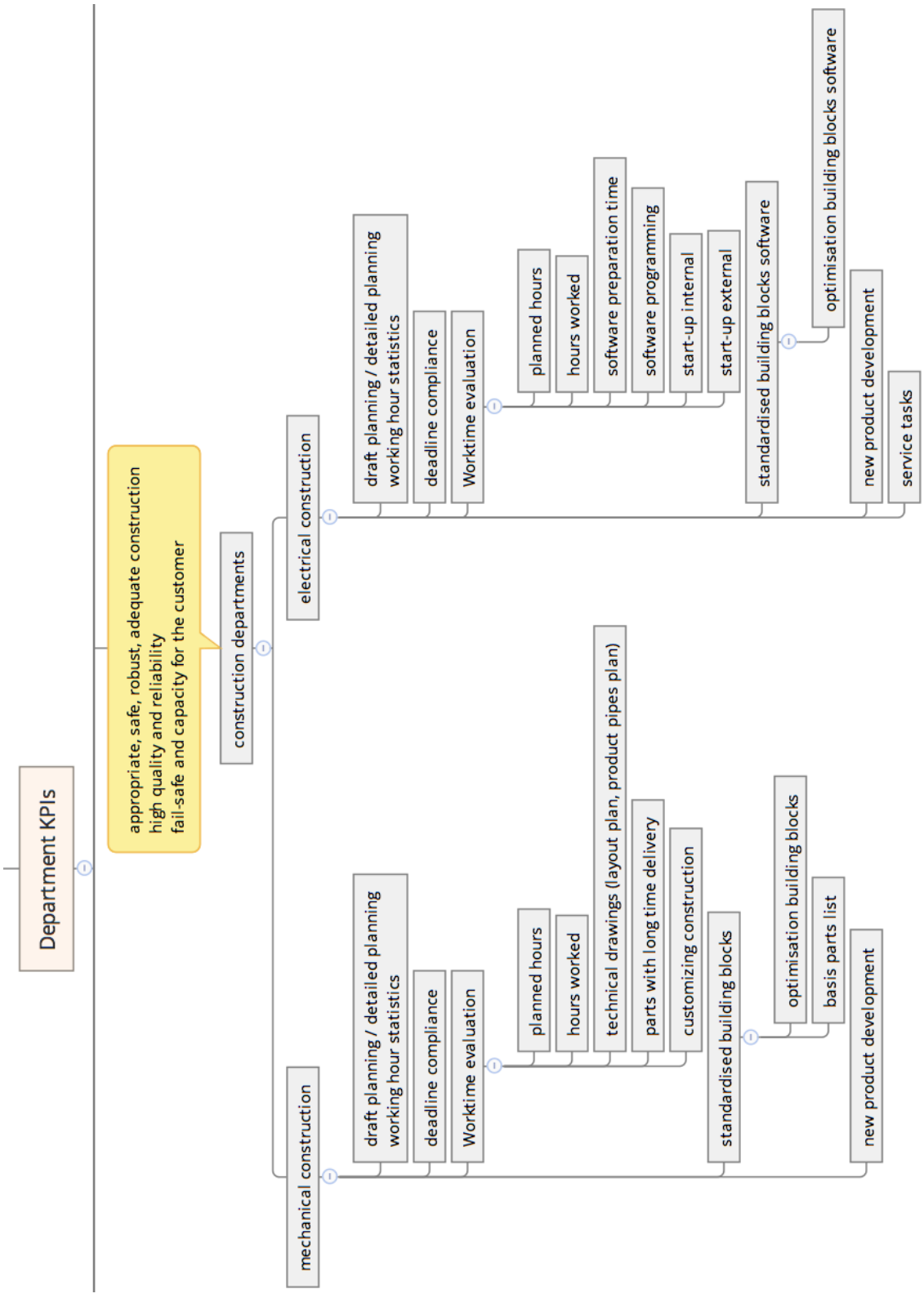


Figure 25 - KPI development of mechanical and electrical construction

4.3.3.4 Meetings to improve management style

The discussion of the company KPIs, used by the senior owner and the two owner brothers, showed that the current KPIs were not used internally. Until the date of these workshops, employees were not involved in the discussion and interpretation of the KPIs, and decisions were made by the senior owner and the two owner brothers. The typical weaknesses of the SME characteristics underline the potential for improvement for most SME with “lack of managerial skills and career development” and “owner orientation with a command and control culture”. The result of the interviews in the case company also showed that the employees would like to have “a transparent project management for customer projects”, “more KPIs”. It also showed that the heads of departments would like to overcome the problematic practice of “controlling tool is project deadline” and the “management by intuition and experience”.

Following the concept of Hidden Champions, a leader has to “set clear and ambitious goals” and has to practice an “authoritarian and participative leadership”. This means practicing an authoritarian leadership style in the fundamentals, like the definition of the company mission, but also practicing a participative leadership style in other details, such as resource allocation and project priorities in the departments. In a meeting with the senior owner and the two owner brothers, the following rules for the improvement of the leadership were mutually developed:

- agreement of goals with employees,
- focus on areas of improvements for strategic alignment,
- regular communication with employees,
- visualisation of KPIs and trends in the departments for all employees and,
- giving feedback and asking for feedback from heads of departments and employees.

The participants of the meetings agreed on these rules and tried to implement them in the following weeks. In a second meeting between the senior owner, the two owner brothers, and the heads of departments, they shared

their experiences of implementing the changes in leadership style. The participants agreed that it was difficult to change their leadership style but also agreed on the positive effect of the changes. One quote from the head of the production department was: *"It is impressive to see that these small changes in information sharing and involvement have this huge effect on motivation and engagement. The communication and productivity increased while at the same time the number of internal failures decreased."*

4.3.3.5 IT support for efficient performance management

Lack of human resources is a general characteristic of SMEs. The Hidden Champion characteristics formulate this phenomenon with the expression "to have more work than heads" in the company, in order to avoid expensive overcapacities and waste of working hours. The implementation of the Performance Management System adds additional work in the form of meetings, workshops, data gathering, analysing, defining, and implementing measures in the case Hidden Champion. Lack of human resource was a serious issue running through the whole research project and every discussion with the department heads and the two owner brothers. This was the reason for the search for a suitable business intelligence tool to support data gathering and visualisation for the heads of departments and the general management.

Currently, the case company uses Excel spreadsheets in the various departmentsfor analysing financial and non-financial KPIs. These spreadsheets were not connected to the different IT systems and databases of the company. Data had to be transferred manually from several different databases to the spreadsheets, which was a time consuming and error-prone activity. Research on spreadsheet development shows error rates of 60% in every spreadsheet, which means that one or more data points or formulae are incorrect. Decisions based on this information probably has the same error rates as the spreadsheets themselves, and this can lead to decisions being made based on incorrect information (Panko 2008).

The problem of the imminent lack of resources in SMEs and the error-prone double work of data typing in several Excel lists can be solved through automated and IT supported data collection and analysis. The difficulty of organising large amounts of structured, and sometimes unstructured, data requires appropriate IT support. This can be done using Business Intelligence (BI) software.

Business Intelligence software provides individual historical, current, and predictive views of business data stored in the different IT systems in the Hidden Champion. Common functions of business intelligence technologies include reporting, online analytical processing, analytics, data mining, business Performance Management, predictive analytics, and prescriptive analytics. Table 44 - Selection criteria of the BI tool shows the Business Intelligence (BI) software products that were tested and analysed to support the implementation of the Performance Management System. The selection was done by owner brother 2 and the head of the Hidden Champions IT department.

The selection process was carried out by owner brother 2 in cooperation with the head of the IT department. The researcher attended most of the workshops given by the sales representatives of the software companies, but was not actively involved in the selection process or the final decision. The Hidden Champion decided to buy TIBCO Spotfire because of the combination of functionality, usability, good fit to the existing software, price, and support of the software company.

This process was planned for August 2016 but was delayed until October 2016 due to the large number of meetings with sales representatives of the software companies. The decision was taken by the senior owner and the two owner brothers of the Hidden Champion. In total, this process lasted three months.

Software	Software developer	Advantages, disadvantages	Investment in software
Qlik Sense	Radnor, Pennsylvania, United States	Bad usability, connectivity, graphical interface, missing functions	Not further analysed
Microsoft Power BI	Microsoft corporation, Redmond, Washington, United States	Bad usability, graphical interface, missing functions	Not further analysed
Macs control	Macs Software, Zimmern ob Rottweil, Germany	Comprehensive BI tool with predictive analytics but expensive, needs expert support	80.000 EUR
Tableau	Tableau software, Seattle, Washington, United States	Good usability, affordable price, not all needed functions, self-service BI tool	35.000 EUR
Spotfire	TIBCO Software, Somerville, Massachusetts United States	Best fit for IT systems, good usability, various functions, affordable price, self-service BI tool	40.000 EUR

Table 44 - Selection criteria of the BI tool

4.3.4 Evaluation

Phase of research project:	Action Research cycle 1 – Evaluation	**Date:**	Nov. 2016
Participants	Senior owner, Owner brother 1 and 2 Senior manager, head of departments (7) Researcher Supervisor of the research project External independent researcher		
Activities:		**Data collected:**	
Evaluation meeting of the first AR cycle Staff conference Monthly log book		Presentations, meeting minutes, field notes, records in logbook	

Table 45 - Action Research cycle I - Evaluation phase

The evaluation phase in the first Action Research cycle aimed to evaluate the planned and implemented actions during the previous phases of the first Action Research cycle. The actions were compared with the objectives and expectations formulated during the planning phase. An important further aspect is the evaluation of the whole first Action Research cycle by the practitioners and the researcher.

4.3.4.1 Evaluation meeting with general management of the case HC

The main objective of the first cycle was the development of a tailored Performance Management approach for the Hidden Champion, as well as the first brief implementation steps. All planned and performed actions in the research project were evaluated in a meeting with the senior owner and owner brothers 1 and 2. The following actions were performed during this phase of the project:

1. Developing a Performance Management approach including company strategy
2. Meetings and workshops in all departments to identify current and future KPIs including strategy maps for Performance Management
3. Research on BI tool for efficient Performance Management
4. Implementation of BI tool - postponed

Every step was cooperatively planned, performed, discussed, and subsequent improvements were implemented. The above activities were documented with field notes, meta plan boards, logbooks, and reports. These documents facilitated the evaluation of the activities. The data was analysed to define improvements to both the methodology of the research project and the implementation of the Performance Management System in the Hidden Champion. All activities were rated positive by the participants and brought motivation for the second Action Research cycle. This stage is particularly important for the second Action Research cycle as it has a major influence on the engagement of the participants and the design of the second Action Research cycle. The activities performed in the first action research cycle were derived from the Performance Management strategy map for Hidden Champions and are illustrated in the strategy map for the Hidden Champion in Figure 26 - Performed activities in the first action research cycle.

Most of the identified problems from the diagnosis phase of Action Research cycle 1 were addressed with measures. The evaluation of the activities of Action Research cycle 1 is documented in the following paragraphs.

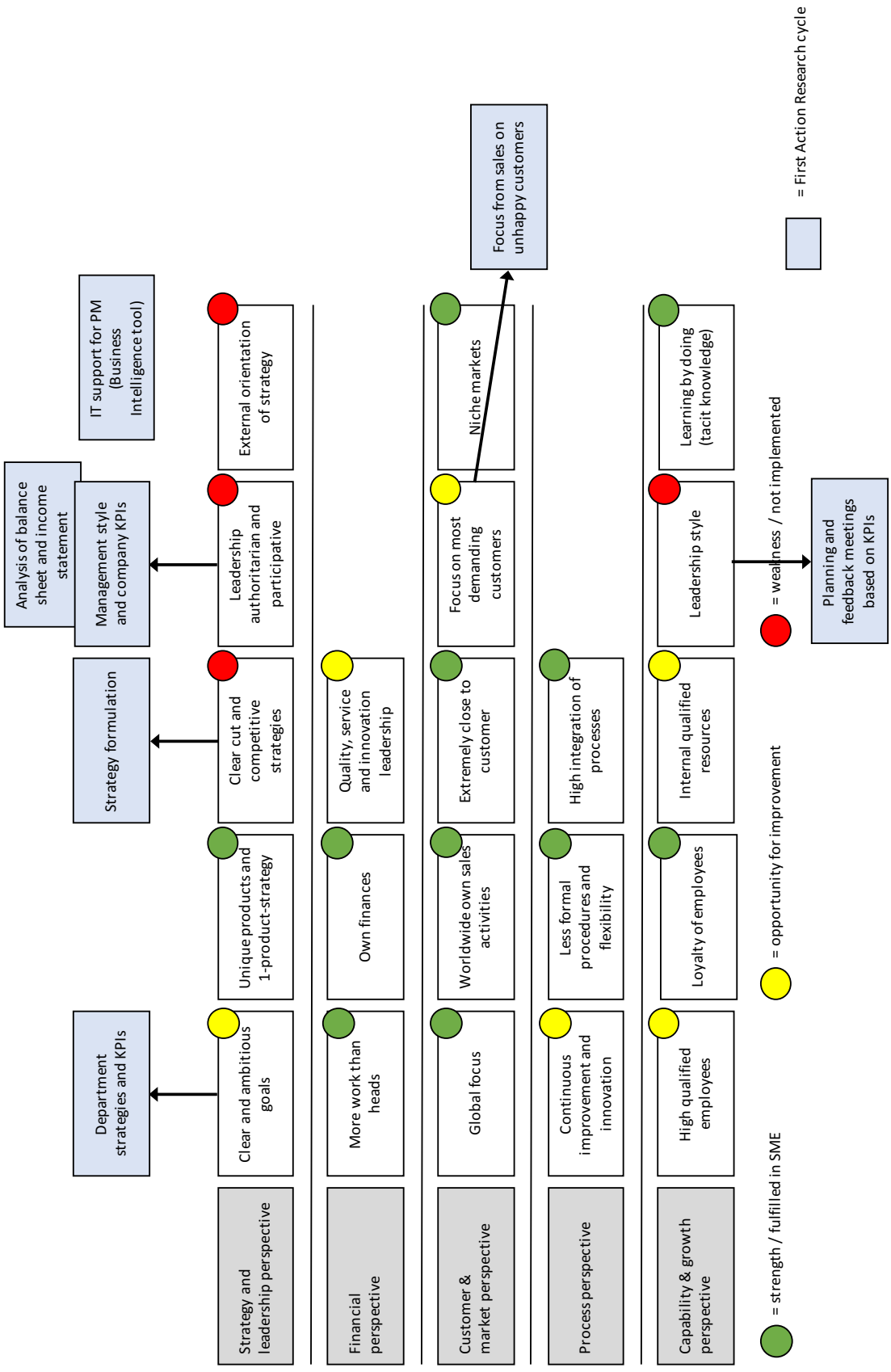


Figure 26 - Performed activities in the first action research cycle

Performance Management - underling company Performance strategy

The implementation of Performance Management needs a mutually agreed performance strategy for the Hidden Champion. This strategy was developed in several meetings and workshops with the senior owner and the two owner brothers. The senior owner had over 30 years of experience working in the industrial sector of special purpose machinery manufacturing and has comprehensive market experience. He has led the company to the position of a world market leader in this niche, however the company strategy the Hidden Champion had followed in the past was implicit and not documented until the workshops with the researcher.

The strategy was formulated based on the latest market experiences due to the active involvement of the senior owner and the two owner brothers in sales activities. The strategy is based on close customer cooperation and customer driven research and development projects for product improvements. Performance improvements and competitor differentiation can be achieved through close cooperation with universities in product innovation. The focus on business process innovation has always been a USP for the Hidden Champion and should be focused on marketing to emphasise the unique combination of chemical and mechanical engineering.

However, the developed strategy in the course of the Performance Management implementation was based on personal opinions and on gut feeling because of an absence of hard facts about market development. Market studies, business sector information, and customer surveys normally improve the application of the company strategy. So this was an area for potential improvement which was attempted to be addressed in the second Action Research cycle.

Development of department performance strategies

Meetings to identify the use for KPIs for Performance Management were done with owner brother II and the heads of departments. The currently used KPIs were discussed and a draft of useful KPIs for the purpose of performance improvement was developed. The company strategy was broken

down for the different departments of the Hidden Champion and useful KPIs were derived. The department strategies and the proposed KPIs were documented in the form of mind maps (strategy maps). The discussions were positive and led to an improved understanding and communication of the general management and the heads of the departments.

Meetings to improve management style

Meetings to improve the management style were performed with the senior owner, the two owner brothers, and the heads of departments. In these workshops, small but effective changes in leadership style, based on the SME characteristics and the Hidden Champions concept, were developed, discussed and implemented. In a second meeting, these changes were reflected and further improvements were planned. These changes led to a transparent leadership style with the involvement and participation of all employees. The overall effect was increased motivation and engagement of the employees of the case company.

Performance Management System IT support - BI tool

The selection of the business intelligence tool was planned for August 2016, but took in total three months, until October 2016. The selection of suitable software was difficult due to the large number of meetings with sales representatives from different software companies and the different functionality and price levels.

IT support for efficient Performance Management (BI tool)

The selection of the Business Intelligence (BI) tool took a total of three months from August – October 2016, from the initial research to decision making. This was the reason for postponing the implementation phase of the BI tool to the second Action Research cycle.

Evaluation of the Action Research cycle

The first Action Research cycle was evaluated positively by the senior owner, the two owner brothers, and the researcher. The first step of the project was

the analysis of the initial situation through interviews with the general management and all heads of departments. This activity, especially the feedback meeting, was valued very much by the general management and the heads of departments due to the development of a common understanding and consciousness of the problems and the situation of the case company in general. This produced some kind of ignition spark for the importance, awareness, and willingness to cooperate in the research project on all levels of the organisation. During the project, it was important to conduct regular workshops with the senior owner, the two owner brothers, and the heads of departments in order to gain acceptance and commitment for the entire process of the research project. Another important activity during the course of the Performance Management implementation was the formulation of a company strategy. This reflective process led to the insight of missing market data and led to future improvements for the strategy process. One accompanying aspect in the research project thus far was lack of human resources, particularly in the phase of the selection of the Business Intelligence tool, which resulted in delays for the research project plan.

In the evaluation of the project so far, the participants agreed that the maturity of the present Performance Management System in the Hidden Champion was low. The participants recognised the improvement potential of the implementation of the Performance Management System in the case company.

4.3.4.2 Staff conference

In order to reflect on, and improve, the research project in November 2016, a research conference with the university supervisor of the research project, an external academic, the practitioners, and the researcher was held. In the conference, the progress of the research project was presented by the practitioners and the researcher. The conference took place at the end of the taking action phase and in the evaluation phase of the first Action Research cycle. The following reflections were part of the outcomes from the supervisor conference:

- SME characteristics are valid for the Hidden Champion – owner manager with operational management competencies rather than managerial competencies / lack of strategic orientation / lack of resources for the research project
- The analysis of the initial situation of the company brought a common understanding of the different improvement potentials and priorities, including motivation for change
- Performance Management alignment needs a defined, formulated, and communicated company strategy - this had a positive effect on the whole organisation
- Definition and implementation of departmental Performance Management strategies, including KPIs, was a fruitful process, especially in aligning departmental strategies
- Research project brought better understanding of balance sheet and income statements and influenced a positive external image (banks, advisory board etc.)
- Momentum grew with the implementation of the first KPIs (financial figures, working hours statistics).
- Substantial contribution to motivation and engagement through the change of the leadership style in the company
- Performance Management IT support (Business intelligence (BI) tool) seems helpful – problem was the long selection process (approx. 3 month)
- Integration of department heads in the project, on an operational level, was necessary and improved communication in the case company.

The result of the evaluation conference was positive and underlined the effect of Performance Management for the case Hidden Champion. The conference was also very helpful in the preparation of the second Action Research cycle, especially as input for the diagnosis and planning phase.

4.4 Second Action Research cycle

Dates:	December 2016 – September 2017
Participants:	Senior owner, 2 owner brothers, senior manager, heads of departments (11), supervisor of research project, external independent, researcher, researcher
Data collection:	Metaplan board results of workshops, Field notes, Business documents, Internal data of the Hidden Champion, Presentations, Monthly log report of the researcher

Table 46 - Plan of second Action Research cycle

The activities performed in the second Action Research cycle are documented in this section of the thesis. The second cycle started after the end of the first cycle with a short overlapping time of the evaluation conference. The main objective of the first cycle was the development of a tailored Performance Management approach for the Hidden Champion and first brief implementation steps. The results from this cycle formed the basis and foundation for the second Action Research cycle - the implementation of the Performance Management System. The team of owners and managers of the Hidden Champion experienced the positive cooperation of the first Action Research cycle, and now had a better understanding of the role of the researcher and the kind of cooperation in the research project. The prior formulated research project plan was revised according to the results of Action Research cycle 1. Some priorities changed during the first Action Research cycle, such as the importance of the analysis of the financial statements. The positive experiences so far were used to integrate sceptical managers and employees in the project to tease out as many different facets of performance and Performance Management for the case company. The main aim of the second Action Research cycle was the implementation of a tailored Performance Management approach. The nature of the work in this phase of the research project again varies from facilitating, process mapping and analysis workshops, setting up progress meetings, attending project meetings, and giving presentations. This second Action Research cycle had a length of

approximately nine months, starting December 2016 - after the evaluation of the research project in the second staff conference.

4.4.1 Diagnosing

Phase of research project:	Action research cycle 2 – Diagnosing	**Date:**	Dec. 2016
Participants	Senior owner, owner brother 1 and 2 Senior manager, heads of departments (7) Researcher		
Activities:		**Data collected:**	
Meetings with senior owner, two owner brothers, managers Project audit regarding the project progress Presentation / discussion of results Monthly log report		Metaplan board results, Presentations, meeting minutes, field notes, records in logbook	

Table 47 - Action Research cycle 2 - Diagnosis phase

The diagnosis phase of the second Action Research cycle is roughly sketched in the table above. The meetings with the senior owner, the two owner brothers, and the heads of departments start with a presentation of a summary of the findings so far were discussed, including the tailored Performance Management approach, the improved analysis of financial documents (profit and loss statement, balance sheet), the results from the evaluation phase, the staff conference with the supervisor and the external researcher, and the perception of the achievements in improving financial and non-financial performance of the case company. The progress of the research project was jointly audited and the results were also discussed in the meeting. The discussion included the reflection of the initially formulated research objectives. Priorities for the following second Action Research cycle were formulated:

- Regular review of the company strategy, including the integration of external information regarding market developments, customer priorities, competitor analysis etc.
- Implementation of IT support for Performance Management System (BI software) and integration of all heads of departments in the analysis, interpretation, and improvement of the results
- Retaining and fostering of the collaborative discourse, as well as the development of improvements in the SME - implementation of continuous improvement workshops
- Innovation activities, e.g. with external partners, to improve the product and to improve the qualification of the employees.

The project was evaluated positively and the positive mood of the group of owners and managers enabled the integration of sceptical managers and employees in the research project. One quote from the head of the sales department was: *"I am surprised that this project implemented so many positive small and large changes in our company. I always thought that we have to concentrate on the customer projects and our first priority should be delivery dates. I thought that every other activity than concentrating on delivery dates, is only a distraction from the main priorities. That was the reason why sales was reserved in the cooperation in the research projects. But the positive experience and feedback changed my mind. I see that Performance Management enables substantial improvements and we will cooperate as good as we can."*

The result of the meeting was very positive due to an improved commitment to the research project. The implementation of Performance Management in the Hidden Champion was seen as being very favourable. The members of the meeting also agreed that the case Hidden Champion is a typical SME and that the common problems, like lack of resources, lack of strategic orientation, external orientation, focus on day-to-day business only, lack of communication and discussion, can be observed in the case company.

4.4.2 Planning

Phase of research project:	Action research cycle 2 – Planning	**Date:**	Jan 2017
Participants	Senior owner, Owner brothers 1 and 2 Senior manager, heads of departments (7) Researcher		
Activities:		**Data collected:**	
Workshops for the action plan Developing a plan for the taking action phase Monthly log book		Field notes, metaplan notes, action plan Records in logbook	

Table 48 - Action Research cycle 2 - Planning phase

Table 48 summarises the planning phase in Action Research cycle 2, which consisted of two meetings for the preparation of the project plan. A detailed action plan was set up to work on the implementation of the Performance Management System. The following activities were prioritised and planed by the project team:

- Workshops regarding implementation and consolidation of the use of the identified financial KPIs
- Workshop implementation of Performance Management in the construction department
- Workshop implementation of Performance Management in the sales department
- Implementation of working hour statistics for all departments
- Improvement of external orientation (market research, competitor analysis, increased innovation through connection of external partners like universities etc.)
- Improvement of the usage of the Business Intelligence tool including continuous improvement workshops (CIP)

- Improvement of know-how of the employees through internal training programs and through cooperation with external partners like universities etc.
- Implementation of the Earned Value Analysis (EVA) in the construction departments
- Evaluation conference of the project with the supervisor of the research project, the university supervisor, practitioners, and the researcher

The developed action plan of the second Action Research cycle focuses on the revised priorities of the research project. The priorities were set jointly by a team consisting of the senior owner, the two owner brothers, and the researcher. A cross-functional team was formed to design the action plan for the second research cycle, which included owner brother II, the department heads, and the researcher. Due to limited resources on the part of the Hidden Champion and the researcher, the project team developed an adapted project plan and a list of actions. Table 49 - Action plan of the second Action Research cycle summarises the action plan, agreed by the project team, to be undertaken during the second taking action phase of the research project. Due to improved motivation and the positive mood of the management of the case Hidden Champion, the number of activities grew in Action Research cycle 2. Owner brother 2 described this positive effect as "*… like a snowball rolling down the hill...*", and he was pleased with the increased motivation of the managers. The departments had the overall impression that the implementation of the tailored Performance Management approach had several positive effects on financial and non-financial performance.

Actions / Tasks	Participants	Deliverables	Date
Workshops regarding implementation and improvement of the use of financial KPIs	Owner brother 2, researcher	KPIs in place – regular analysis of data in management meetings	01.2017
Workshop implementation of Performance Management in construction department	Owner brother 2, head of mechanical construction, researcher	KPIs in place – regular analysis of data in management meetings	02.+03. 2017
Performance Management in sales department (customer satisfaction)	Senior owner, owner brothers 1+2, heads of departments, researcher	KPIs in place – regular analysis of data in management meetings	02.+03. 2017
Implementation of working hour statistics for all departments	Senior owner, owner brothers 1+2, heads of departments, researcher	KPIs in place – regular analysis of data	02.-07. 2017
Implementation of the Earned Value Analysis in construction departments	Owner brother 2, head of mechanical construction, researcher	Pilot project of EVA – presentation and discussion of results in management team	02.-07. 2017
Improvement of external orientation (market research, competitor analysis, increased innovation through connection of external partners like universities etc.)	Owner brother 2, head of mechanical and electrical construction, researcher	Information on market developments and competitors, cooperation with universities and external innovation partners	02.-07. 2017

Actions / Tasks	Participants	Deliverables	Date
Improvement of know-how of the employees through internal training programs and though cooperation with external partners like universities etc.	Owner brother 2, HR department, researcher	Qualification matrices, training program, set up of cooperation's with external partners	02.-07. 2017
Improvement of the usage of the business intelligence tool	Owner brother 2, head of IT	Regular integration of KPI in management meetings	05.2017 - ongoing
Interviews with heads of departments regarding changes and improvements of Performance Management and research project achievements	Senior owner, owner brothers 1+2, heads of departments, researcher	Evaluation report on research project	06.2017
Evaluation conference of the of the research project, the practitioners and the researcher	Supervisor, external researcher, owner brother 2, researcher	Presentation of project progress, reflection on results, field notes regarding evaluation of the research project	06.2017

Table 49 - Action plan of the second Action Research cycle

An important activity with positive internal and external effects for the banks and the supervisory board was the analysis of the financial documents (income statement and the balance sheet) in Action Research cycle 1. The project team decided to continue and deepen the analysis of the financial documents. Construction and sales departments were prepared for further analysis of the customer project related data, such as Earned Value Analysis (EVA) and customer satisfaction analysis. The sales department also wanted to improve the formulated strategy of the first Action Research cycle through the integration of market data and competitor analysis. The construction departments established closer contacts with local universities, and the im-

proved implementation of the Business Intelligence tool supported these activities. As a final step of Action Research cycle 2, the evaluation phase was planned.

4.4.3 Taking action

Phase of research project:	Action research cycle 2 – Taking action	**Date:**	Feb. – Jul. 2017
Participants	Senior owner, Owner brothers 1 and 2 Senior manager, heads of departments (7) Researcher		
Activities:		**Data collected:**	
Consolidation of the use of financial KPIs PM in construction department PM in sales department (customer satisfaction) Working hour statistics for all departments Earned Value Analysis in construction departments Market analysis and competitor analysis Set up of partnerships with external knowledge and innovation partners like universities Training program for employees based on qualification matrices Improvement of the usage of the BI tool Monthly log records		Meeting minutes, field notes Audio recordings, Coding, Presentations Root-cause analysis Presentation, meeting minutes, field notes, transcripts Records in logbook	

Table 50 - Action Research cycle 2 - Taking action phase

The activities of action research cycle 2 are summarized in table 50. As discussed previously in the diagnosis phase, the motivation of the management of the Hidden Champion grew and the number of activities increased, the first successes were rated very positively by the participants and enabled increased activities in the research project.

The tasks in the second project phase of taking action were planned by the project team as shown in the following extract of the project plan:

Figure 27 - Project plan of the taking action phase of AR cycle 2

The following sections describe the tasks and results planned in the second Action Research cycle of the research project.

4.4.3.1 Improvement of the use of financial KPIs

The project team decided to work in the second Action Research cycle, again, on the financial figures of the Hidden Champion due to the importance of the data for all departments of the Hidden Champion. The better understanding of the balance sheets and the income statement was crucial for owner brother 2 and his role inside and outside the company, especially in presentations with banks and the supervisory board. His understanding of the financial figures improved during the project, and the different factors for influencing and improvement of the financial and non-financial figures became much clearer. The KPIs, in Figure 29 - Balance sheet KPIs - financial performance of the , were defined according to Gräfer (2001) and Gladen (2014), who state that they should picture the financial performance of the Hidden Champion (Gladen, 2014, Gräfer, 2001). The implemented regular analysis of the financial figures led to many insights into the development of the Hidden Champion. One example for new KPIs and data was the change of worldwide distribution of revenue and project business.

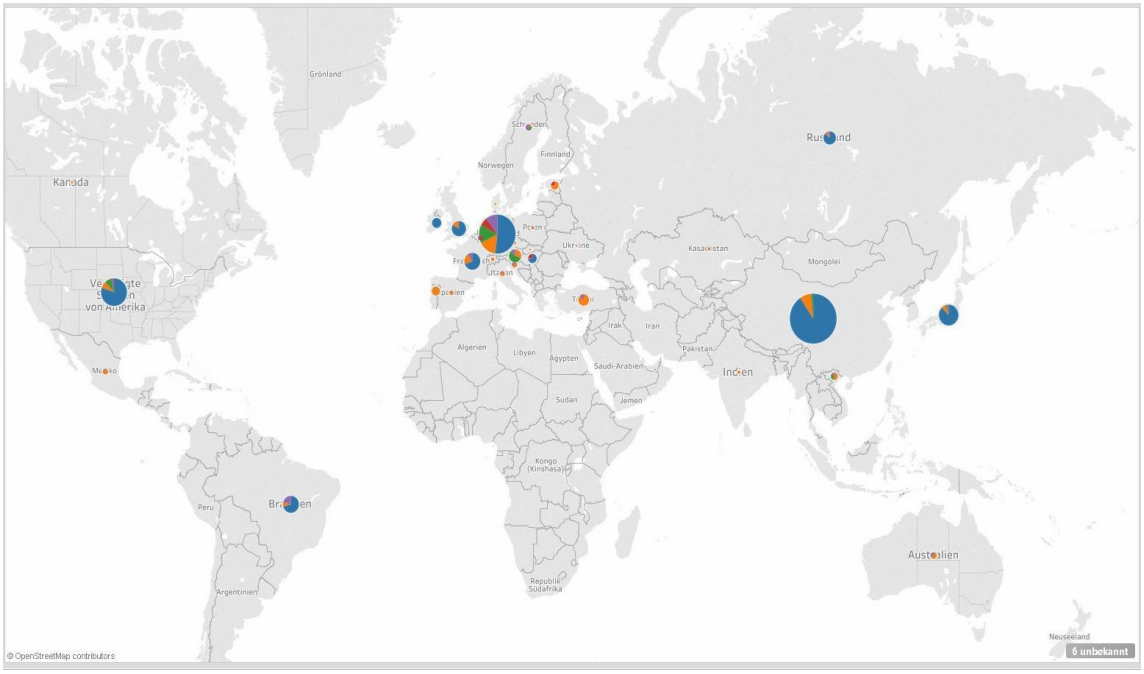


Figure 28 - Distribution of revenue worldwide of the case HC

This analysis, shown in Figure 28 - Distribution of revenue worldwide of the case , was executed to illustrate the current success of sales activities with the aim of improving sales activities and focusing on growing regions. In the past, without the BI tool, an extensive and time consuming analysis in Excel had to be performed to generate a comparable diagram.

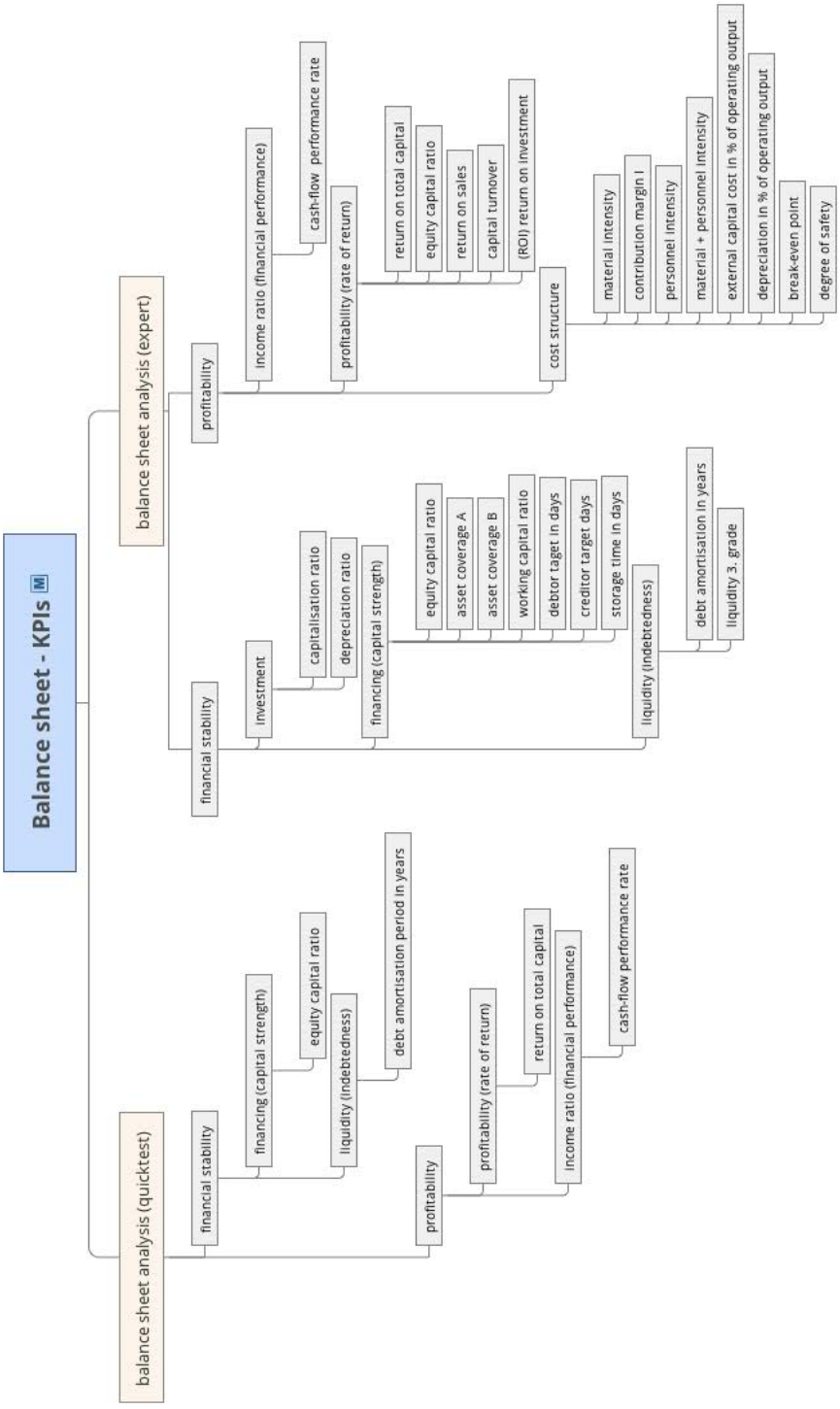


Figure 29 - Balance sheet KPIs - financial performance of the HC

The understanding of the financial figures in the management team grew during the research project. This led to informed discussions about the use of financial resources to improve the profitability with the effect of improved financial stability.

The financial stability and the profitability of the Hidden Champion improved during the course of the research project due to the various activities of the owner brothers and the management team. This is a cumulative effect of the improved understanding of the management of performance through an explicit strategy, decision making, and resource allocation on the level of the general management and the heads of the departments. Table 51 shows the positive financial developments from 2015 – 2017, e.g. the increased financial stability through the improved equity capital ratio from 67,8% to 115%, which were always positive ratios compared to the target value of 30%, according to Gräfer (2001) and his book of balance sheet analysis with the updated KPIs of Gladen (2014) (Gräfer, 2001, Gladen, 2014). Table 51 - Development of KPIs of the balance sheet 2015-2017 also illustrates that the cashflow performance ratio and the return on capital were positive. The increased financial performance had a very positive effect and greatly increased the motivation for the participation of the practitioners in the research project.

Analysis section		Indicator	Calculation	2017	2016	2015	Target
financial stability	financing (capital strength)	equity capital ratio	= equity capital / total capital	115,0%	109,6%	67,8%	> 30%
	liquidity (indebtedness)	debt amortisation period in years	= (external capital - liquid assets) / cashflow	-3,45	-2,48	-1,78	< 3 J.
profitability	profitablility (rate of return)	return on total capital	= (Earnings before tax + borrowing costs) / total capital)	34,5%	29,7%	9,7%	> 15%
	income ratio (financial performance)	cashflow performance ratio	= cashflow / operating performance	62,5%	57,4%	0,3%	> 10%

Table 51 - Development of KPIs of the balance sheet 2015-2017

4.4.3.2 Performance management in construction departments

A second priority was the implementation of the performance KPIs in construction departments. Defined KPIs are shown in the figure below.

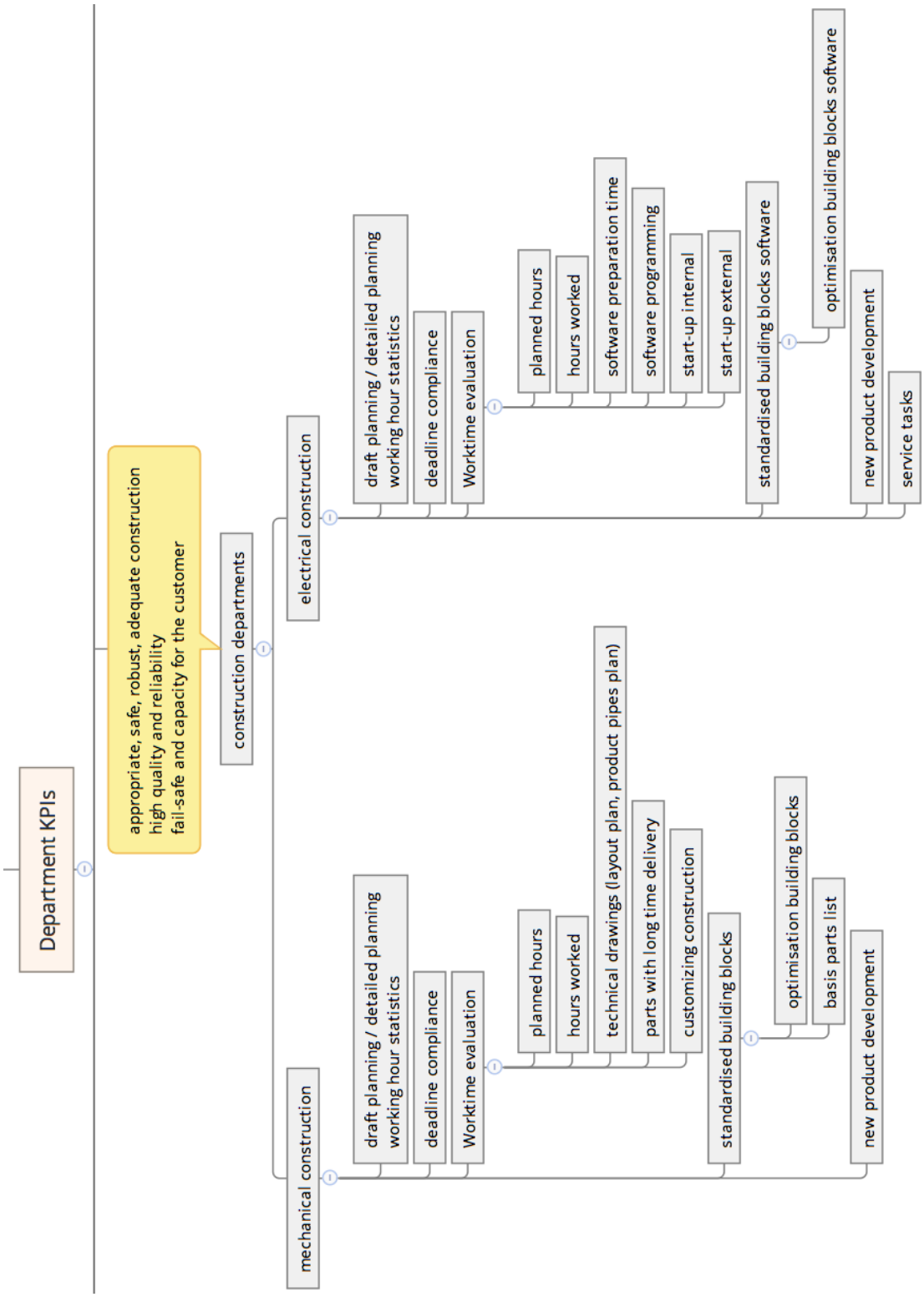


Figure 30 - KPI development of mechanical and electrical construction

In the past, KPIs of the mechanical and electrical construction department were based on the project specific analysis of the working hour statistics. The number of working hours was estimated (based on past experiences with former comparable projects) at the beginning of a customer project by the head of the electrical and mechanical construction department. In current projects, the working hours spent on every project were documented by the employees on a daily basis. A half-automated Excel file, used for progress reporting, summarised all planned and performed working hours for the current customer projects. The data of working hour statistics was also used for reports regarding the performance analysis of customer projects and progress reporting.

The analysis of the non-financial data of the working hour statistics in the construction departments was enhanced by combining it with the financial data from the balance sheet analysis and the financial data from the pre-project calculations from the sales department. This analysis was very helpful and positive for the heads of departments in controlling the use of their human resources in the customer projects and measuring project performance..

Mechanical construction customer project 2618

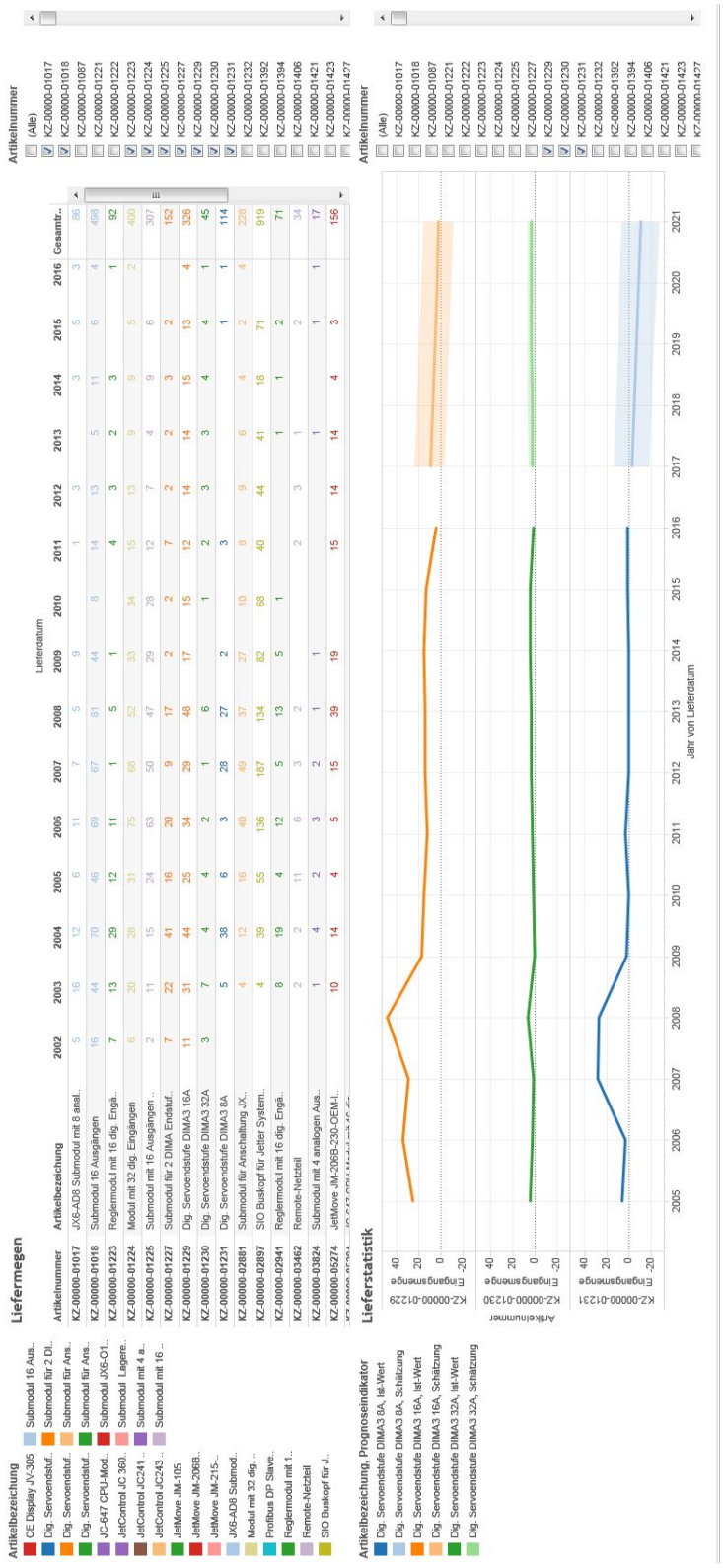
Analysis from 03.2017	**budget in hr for construction (from sales)**	**planned work in total (in hr)**	**planned work to date (in hr)**	**actual work to date (in hr)**
Component A (resin)	65	65	50	40
Component B (hardener)	45	70	55	54
Dosing / mixing valve	75	75	45	60
Total in hr	**185**	**210**	**150**	**154**
Total in %	**100%**	**114%**	**81%**	**103%**

Table 52 - Working hour statistic - example mechanical construction

The above extract of the working hour statistics shows the reason for exceeding the planned construction budget. The sales department underestimated the construction for component B, which led to a breach of 14% for the whole construction project. The second interesting piece of information derived from the table above shows the planned work budget regarding the construction of the dosing and mixing valve was exceeded. Although the actual work is more or less close to the planned work, this construction work package needs attention to avoid any further budget excess. The head of the electrical construction department commented: *"In the past we focused solely on the work on customer projects and fulfilment of project deadlines - mainly controlled through the supervisor. The discussions in course of the research project opened the eyes of our employees regarding their contribution to financial and non-financial performance and uncovered many small improvement opportunities that were carried out easily by all employees. Our productivity was not bad in the past, but the implemented KPIs and more important, the discussions about the opportunities to improve performance enabled all employees to decide on the priority of their own tasks on a day to day basis. The sum of all these small improvements on the operational level are a substantial contribution to the improved performance of the electrical construction department."* This quote from the head of the electrical and construction departments summarises a general opportunity for Hidden Champions to overcome their limiting characteristics, like short-term priorities, owner orientation, lack of managerial skills, command, and control culture (elaborated in section 2.2 Characteristics of Small and Medium sized Enterprises (SMEs)), through the implementation of a Performance Management System.

The head of electrical construction implemented further data analysis activities regarding technical questions and problems of the design and construction of the machines. Due to technical developments, suppliers regularly change their electrical products to newer generations with the consequence that the old system phases out, e.g. controller systems. This leads to the necessity of changing the construction of the building blocks of the standard machines and the current projects. On the other hand, a sufficient number of spare parts for machines in use on customer sites must be in stock to ensure

effective and fast service for customers. The lifetime analysis of this electrical equipment was performed with KPIs on project data and stock data of projects.



Translations in figure:

Artikelnummer = product number

Alle = all

Artikelbezeichung = article name

Gesamt = total

Lieferdatum = date of delivery

Liefermenge = quantity of delivery

Jahr des Lieferdatum = year of delivery

Einsatzmenge = application quantity

Prognoseindikator = prognostic indicator

Figure 31 - Analysis of lifetime controller systems in customer projects

The defined and implemented KPIs led to increased transparency of the customer project progress. The heads of the electrical and mechanical construction departments could make informed decisions for resource allocation and the distribution of the employees in customer projects. One quote from the head of the mechanical department was: *"The prompt progress information for the different customer projects enabled informed decisions and improved the process time about 10-20%. This is a useful and very important improvement for our customers and also improved the quality and accuracy of our construction designs."* The improvement and shortening of the construction time is short for one customer project. The accumulation of the many small improvements culminated in a significant improvement in the mechanical and electrical construction departments, as previously argued.

The success of the multitude of improvement activities can be pictured best with the development of the return on sales figure. During the course of the research project, the return on sales increased from 14% to 17%. This may have been a result of the improved focus on relevant tasks and the reduced waste in employee activities.

4.4.3.3 Performance management in the sales department

Based on the positive results of the research project, the heads of departments were convinced of the positive effect of Performance Management implementation. The sales department discussed their definition of financial and non-financial performance in a workshop with the researcher and owner brother II. The results of the workshop were the definition and further implementation of marketing and sales related KPIs. Important changes were also implemented regarding the KPIs for the sales department. Firstly, there was an attempt to gather market related information, such as the customer demand of machines in different regions, systematically and regularly. This information helped to make informed decisions on which exhibition or trade fair is relevant. Marketing and sales activities were concentrated on relevant markets with higher probability of contract closure.

Another important activity in the sales department was the analysis, and subsequent improvement, of the customer satisfaction reports for current and past customer projects. This included the development of improved internal communication regarding customer information and progress of projects based on the project progress reports from the different departments in the Hidden Champion. The sales project engineer collected data regarding customer satisfaction and regarding the quality of usage and reliability of plants on customer sites. All difficulties and technical issues leading to complaints and poor levels of customer satisfaction were documented and reported, and measures were derived to ensure a high level of customer satisfaction in every project, including all usage phases for the plants. Due to the importance of this information on customer satisfaction, this subject was integrated into the “Friday morning meeting” of all heads of departments. The discussions in the meetings led to improved customer closeness, through greater cooperation and communication regarding fast and sustainable problem solving for the customers. Several positive effects, like improved customer orientation, customer closeness, faster problem solving, increased communication etc., are the result of these activities in the sales department.

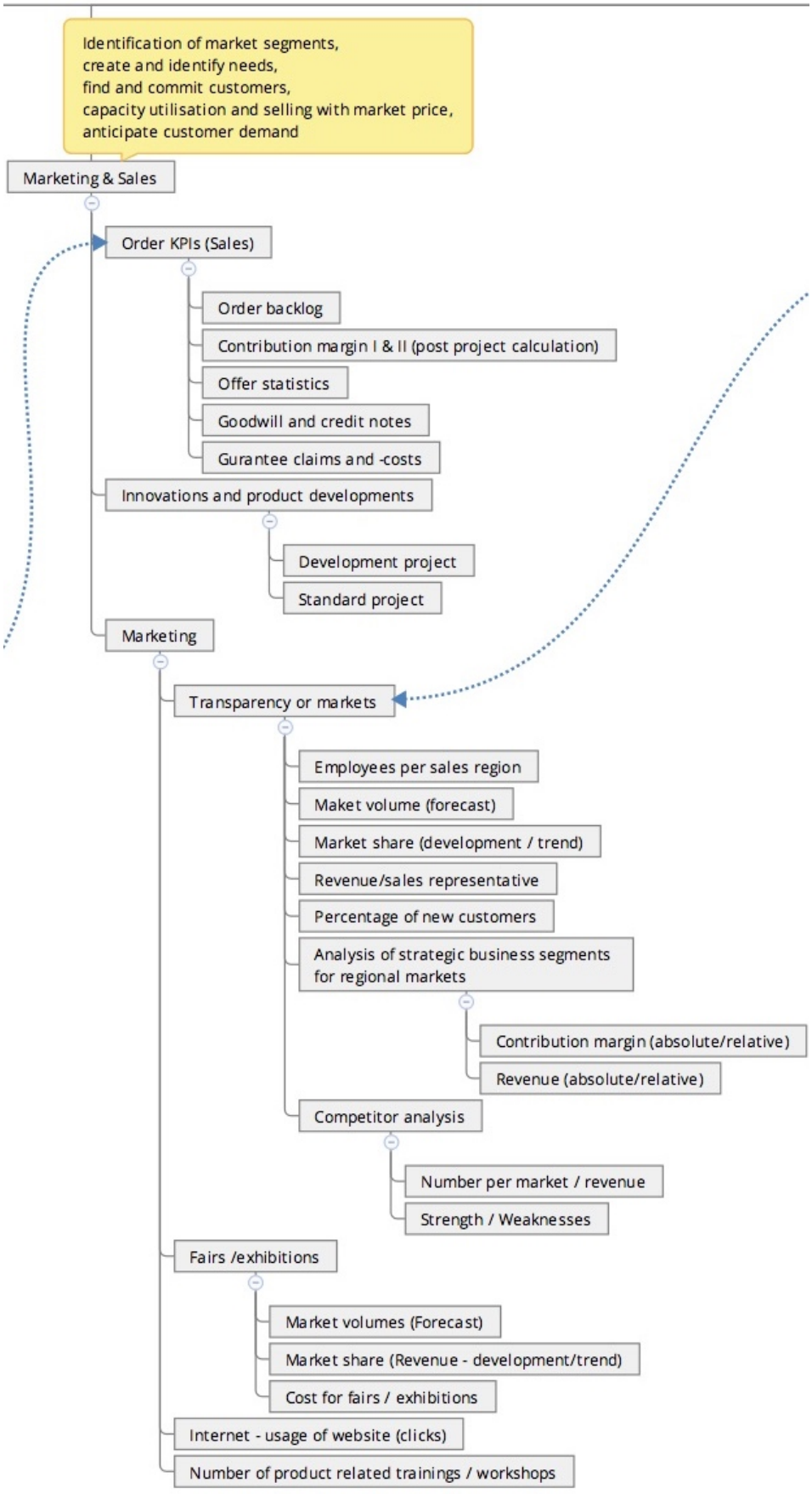


Figure 32 - KPI development and implementation for sales department

Over the course of the research project, the sales and project engineer became the person responsible for regularly analysing customer satisfaction. This easy mapping of responsibility led to a substantially improved awareness of the sales engineers to accompany every phase of the project realisation and the overall customer satisfaction increased substantially through this activity. This led to the sales engineers becoming more involved in project related tasks, which meant that they invested less time in sales activities. This was became a conflict and a point of discussion due to reduced resources for sales and marketing activities, but a positive summary was drawn at the end of the research project.

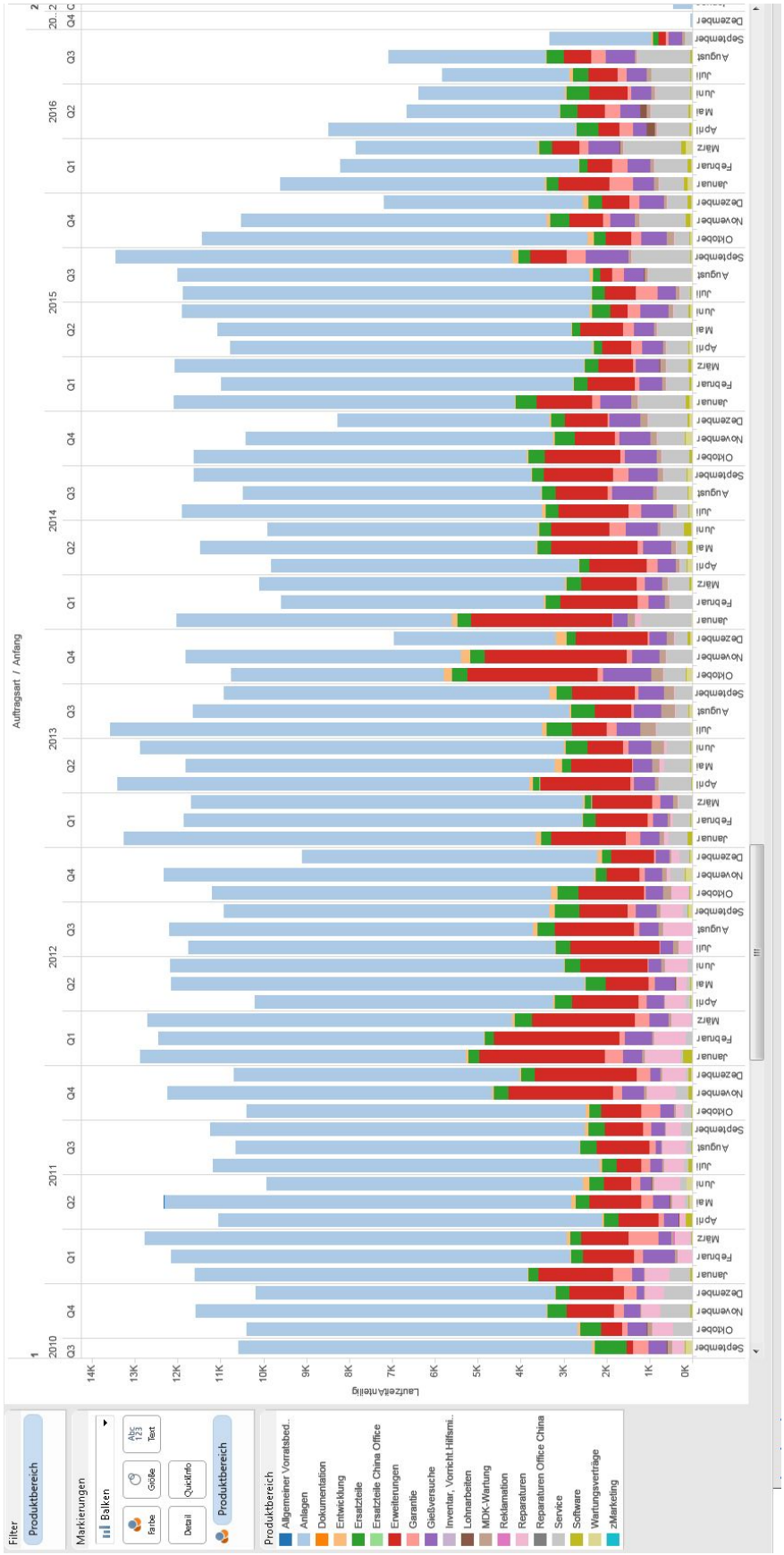
In a second analysis, the number of offers for the special purpose machines was analysed using the implemented KPIs. The number of successful offers that turned into orders is an important indicator for the future development of the general workload in the Hidden Champion. This is the reason that the number of offers and subsequently commissioned projects are a strong leading indicator for the financial and non-financial figures of the Hidden Champion. Through the implementation of the automated data analysis tool, one employee in the financial department of the Hidden Champion, who prepared the different analyses of the offers and commissioned customer projects, was redeployed internally. This took around 20 hours' per month and was a revolving standard activity every month in keeping Excel spreadsheets. The employee was very satisfied with the change of her job and took over other enriched tasks in the financial department.

The improved marketing and sales activities and concentration on customer satisfaction led to improved revenue during the course of the project (from 23,6 Mio. EUR to 26,0 Mio. EUR), which will be discussed later in the thesis.

4.4.3.4 Working hour statistics for all departments

Another task was planned to improve the working hour statistics and to distribute the statistics to all heads of departments in order to analyse and improve the resource allocation in the customer projects. The working hour statistics was a proven method of analysing the workload and efficiency of the different departments in the Hidden Champion. Figure 33 - Woking hours statistic of the shows the distribution of working hours in the last years.

There were many figures and KPIs to evaluate the progress of the customer projects. For example, the share of construction effort is, on average, 25% to a maximum of 40% of the revenue on a standard customer project. This statistic was prepared using large Excel-sheets with a complex procedure of data collection from the IT/ERP-system and manually entered error-prone data. In the past, the discussion of this statistic was done in a weekly meeting involving the senior owner, owner brothers I and II, and all the heads of departments. This procedure changed during the course of the research project to a daily briefing on the working hour distribution in the departments via automatically generated performance emails every morning. This easily available and prompt, transparent information improved resource allocation and project performance.



Translations:

Aufragsart / Anfang = work order category / start

Produktbereich = product category

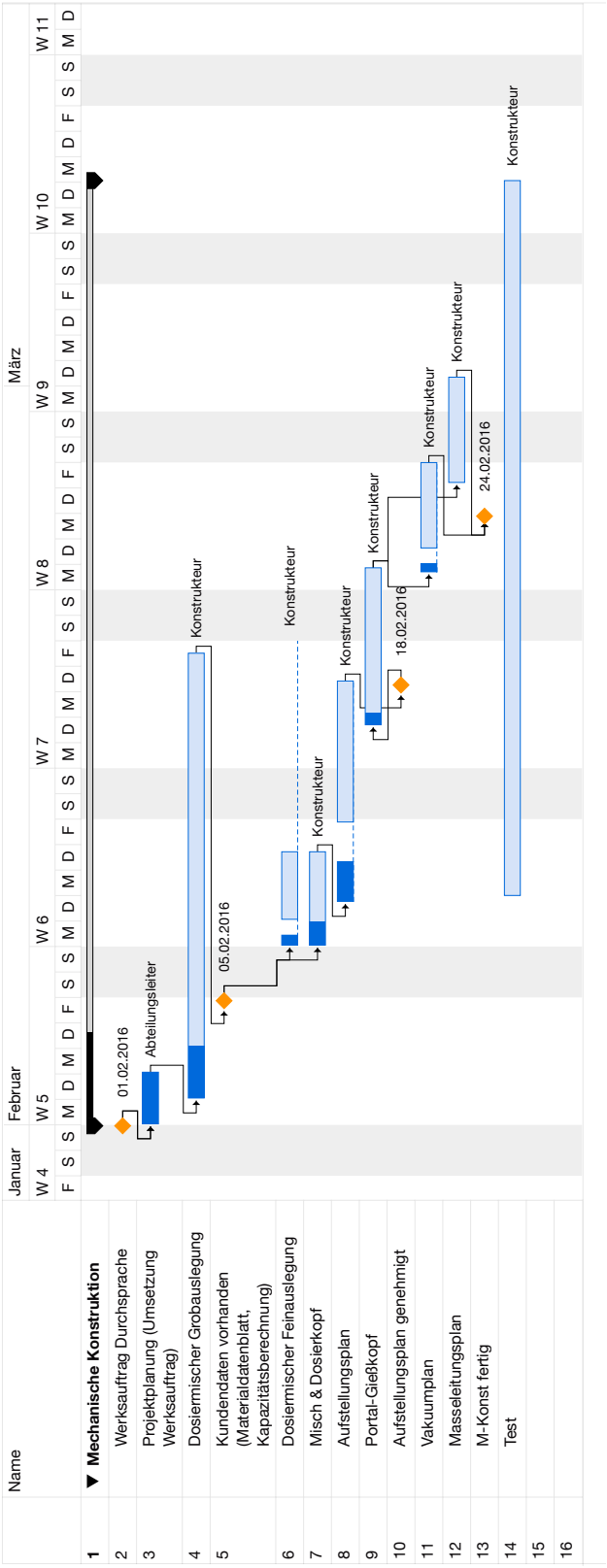
Anlagen = mashinery
Dokumentation = documentation
Entwicklung = research
Ersatzteile = spare parts
Erweiterungen = extension
Garantie = guarantee
Giessversuche = casting attempts
Inventur = inventory
Lohnarbeiten = external paid work

Figure 33 - Woking hours statistic of the HC

4.4.3.5 Earned Value Analysis in construction departments

Over the course of the work in Action Research cycle 1, the use of the Earned Value Analysis in the case company was discussed. The project team decided to analyse one customer project following the method of the Earned Value Analysis to evaluate the benefit for the Hidden Champion. The Earned Value Analysis (EVA), in general, was developed to analyse project performance and progress in an objective manner. EVA uses the accomplishment of work on every task as a variable to measure the fulfilment of the project plan. The sum of the “earned values” is compared with the planned value to date. Deviations show time and cost differences in the project execution at early times and can be estimated for the project completion. This leads to more transparency in project work for customer projects and promised to solve one of the major problems formulated in the analysis of the initial situation of the Hidden Champion (Fleming and Koppelman, 2010).

The Earned Value Analysis was performed and tested in one pilot customer project during the course of the second Action Research cycle. The results were very promising due to easy data gathering and analysis for calculating the Earned Value KPIs. The figure below shows the accomplished work of the mechanical construction department for customer project 2618, which was used as a pilot project for the evaluation of the Earned Value Analysis for the Hidden Champion.



Translations:

Mechanische Konstruktion = mechanical design

Projektplanung (Umsetzung Werkauftrag) = project planning (realisation work order)

Dosiermischer Grobauslegung = draft of blending meter

Kundendaten vorhanden = customer data available

Dosiermischer Feinauslegung = blending meter precision design

Misch und Dosierkopf = mixing and blending head

Aufstellungsplan = layout plan

Portal Giesskopf = gantry of blending meter

Vakkumplan = vacuum plan

M-Konstrukion fertig = mechanical design ready

Figure 34 - Earned Value Analysis for a pilot customer project

4.4.3.6 Market analysis and competitor analysis

The case company is a market leader in the worldwide niche market of vacuum casting machines. The fields of application of the machines and most of the customers are well known. Nevertheless, a market study was prepared by the sales department to picture the market and to find contiguous applications and markets. The conscious market and competitor analysis led to improved knowledge of the current situation of the company. The closeness to customers and the position on the different key markets are identified as unique sales propositions, and added information to the formulated strategy in Action Research cycle 1. The knowledge about this unique situation was implicit. This task in the research project made the information explicit, as it was analysed and written in a report. The information and findings were very helpful to further differentiate from the competitors and identify interesting markets.

4.4.3.7 Partnerships with external knowledge and innovation partners

The aspect of “quality, service, and innovation leadership” of the designed strategy map for the case company, based on SME and Hidden Champion characteristics, was also addressed in the interviews regarding the initial situation in Action Research cycle 1. The senior owner, the two owner brothers, and the heads of departments had the impression that “innovation and improvements have minor importance” in the case company. This subject was addressed in workshops with owner brother II and the heads of mechanical and electrical construction and production with the aim of strengthening innovation in the case company. An innovation initiative that improves the usage of external knowledge was agreed in the first meeting. The head of electrical and mechanical construction intensified their loose and informal contacts to the local universities of applied science of Münster, the department of process engineering, and Bocholt the department of mechanical engineering. The head of production searched for refined and improved manufacturing technologies with the external partners of the universities and machine suppliers. The aim of the innovation initiative was the exchange of knowledge of employees with external partners in order to find engineering students that

may be interested in bachelor or master theses to improve products, drive innovation, and shorten design cycles. One quote from the head of mechanical construction was: *“Our innovation initiative was overdue. We were flooded with day-to-day business and didn’t took the time to lean back to critically review our design and to rework our building blocks. It is very helpful to discuss our designs with external partners and to integrate engineering students for special issues. This innovation activities improved the knowledge and flexibility of our employees a lot.”* The innovation initiative will be part of the regular improvement activities. A quarterly meeting was implemented with mutual exchange and knowledge transfer between the heads of departments.

4.4.3.8 Training program for employees

Improvement of the qualification of the employees was addressed in the strategy map based on SME and Hidden Champion characteristics and the results of the analysis of the initial situation. The HR department developed a comprehensive training plan to improve the qualification of the employees of the Hidden Champion. Based on the current main tasks of every employee, qualification matrices were developed by the heads of departments and subsequent training was organised. Figure 35 - Qualification matrix of sales department shows the qualification matrix of the sales department. The significance of the numbers is as follows: 3 is fully qualified, 2 is a representative (also qualified), 1 means basic knowledge, no number / free is no knowledge).

The matrices were developed for all departments and used to check the qualification level in the departments. The number of qualified employees for every task was counted and necessary training was planned. This led to a substantial improvement of the qualification level in the Hidden Champion.

Sales department										
Name of employee	Marketing	Offer preparation	Calcualtion of customer projects	Visits of customers	Order processing	Customer project management	Contract negotiations	Customer support		
Employee 1	3	2	1					1		
Employee 2	2	3	3	3	3	3	3	3		
Employee 3		3	3	2	3	3	2	2		

Figure 35 - Qualification matrix of sales department

4.4.3.9 Improvement of the usage of the BI tool

The usage of the information provided by the Performance Management System was analysed and improved during the course of Action Research cycle 2. The number of measures and KPIs increased, and the value of information to the company was enhanced. Due to easier and faster analysis, the number of different data analyses increased relative quickly, but this also had barriers in defining the “right” KPIs for the addressed issue, as well as the time consumption for the data collection and substantial analysis. The implemented business intelligence software supported these processes of analysing the performance data of the Hidden Champion. Another obstacle was the definition of the right variables for the question that needed to be answered. One often-discussed subject was, for example, the definition of revenue. Are the provided numbers the gross or net value, with or without granted rebates? The definition of every KPI provided in the Performance Management System must be clearly specified and documented to avoid errors, which was done by the IT department, using the BI system, with comprehensive definitions.

4.4.4 Evaluation

Phase of research project:	Action Research cycle II – Evaluation	**Date:**	June - July 2017
Participants	Senior owner, Owner brother 2 Senior manager, head of departments (7) Researcher Supervisor of the research project External independent researcher		
Activities:		**Data collected:**	
Interviews with head of departments Supervisor conference Evaluation meeting of the second AR cycle Monthly log book		Presentations, meeting minutes, field notes, records in logbook	

The evaluation phase in the second Action Research cycle aimed to evaluate the planned and implemented actions during the previous phases of the second Action Research cycle. The actions were compared with the objectives and expectations of implementing the Performance Management System, which were formulated during the planning phase. Another important aspect was the evaluation of the second Action Research cycle by the practitioners and the researcher.

4.4.4.1 Evaluation meeting with general management of HC

In a meeting with the senior owner, owner brother II, and the researcher, the planned and performed actions in the research project were evaluated. Owner brother I moved in the meantime to the Japanese subsidiary to support the economic progress of the company. The following actions were performed during the second Action Research phase of the project:

1. Consolidation of the use of financial KPIs
2. Performance Management in the construction and sales departments
3. Improvement of working hour statistics for all departments
4. Earned Value Analysis in construction departments
5. Market analysis and competitor analysis
6. Partnerships for innovation with external partners (universities)
7. Training program for employees
8. Improvement of the usage of the BI tool

Each of the above activities was documented with field notes, meta plan boards, and logbooks, resulting in a draft and final report to the company. These documents were evaluated in the same manner as was carried out in Action Research cycle 1. At this point, the data was analysed to define improvements to both the methodology of the research project and the implementation of the Performance Management System in the Hidden Champion. Figure 39 shows the performed activities in the context of the developed framework for Performance Management in the Hidden Champion.

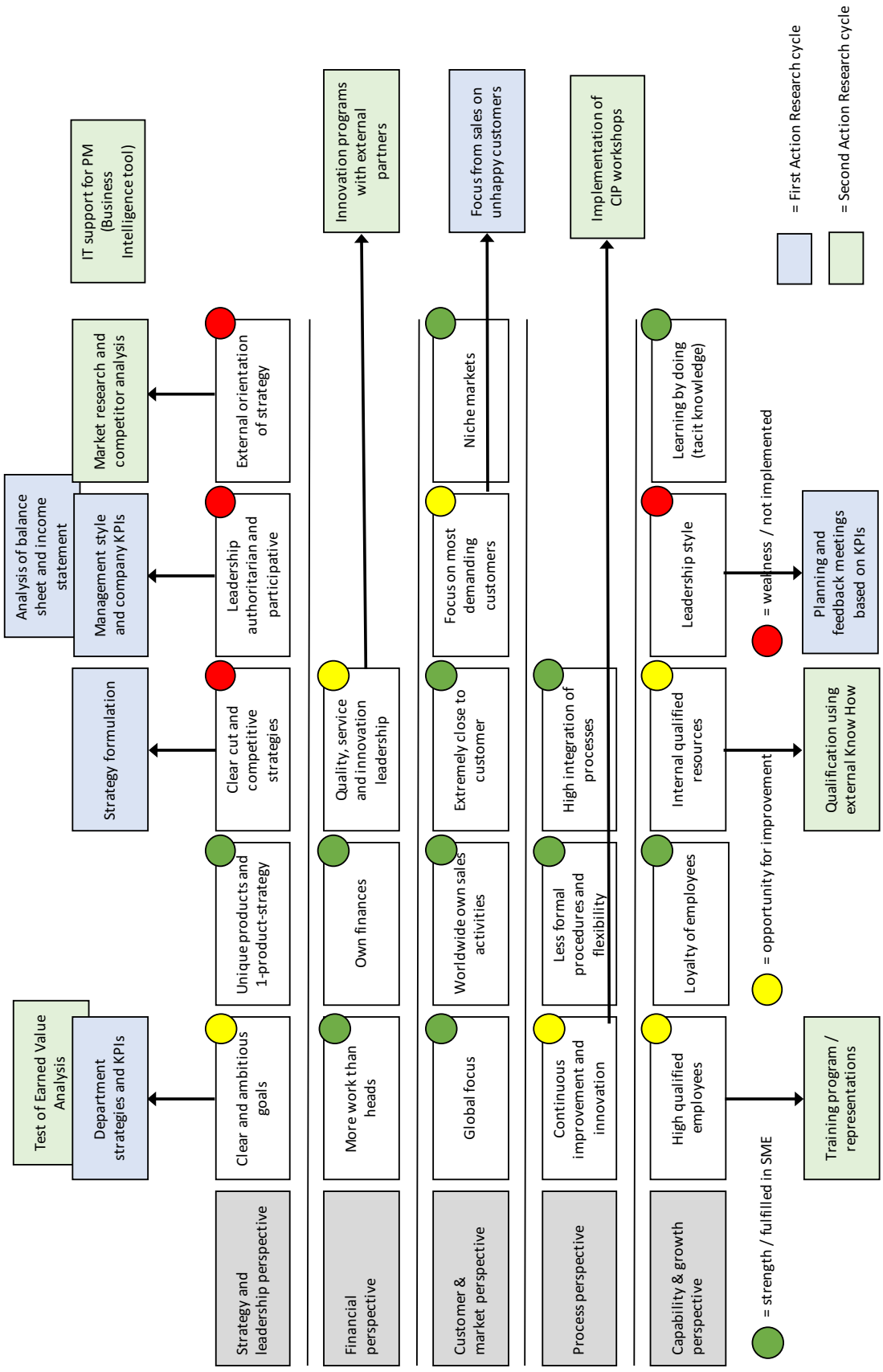


Figure 36 - Performed activities in Action Research cycle 2

The evaluation of the performed activities is documented in the paragraphs below:

Consolidation of the use of financial KPIs

The analysis of the financial data, based on the income statement and the balance sheets, was developed in several meetings and workshops with owner brother II. The difficulties regarding the access to the data in the database of the financial software were technically resolved, but required an economic understanding and basic understanding of the double entry bookkeeping procedures and the structure of the income statement and the balance sheet structure. This knowledge was relatively low at the beginning of the research project and increased substantially during the project.

The financial and non-financial performance were improved in the Hidden Champion and Hidden Champion through this research project, as shown in Table 53 - KPIs of the Hidden Champion (Source: internal data). An extract of the financial statement of the company during the course of the research project showed the following KPIs, that best illustrate the financial performance.

Research project phase	Year	Revenue in million EUR	Return on revenue
Preparation of research project	2015	23.3	14%
Research project	2016	23.1	13%
Research project	2017	26.0	17%
Past project phase (forecast)	*2018*	*30.0*	*20%*

Table 53 - KPIs of the Hidden Champion (Source: internal data)

Financial performance improved over the course of the research project. Revenue grew by 11.6% (2015-17) and, return on sales increased from 14% up to 17%. For 2018, the forecast shows further improvement. Revenue is estimated at to 30.0 million EUR. for 2018, which would be a growth of 28.8% compared to 2015. The return on revenue also increased to 20%.

Performance Management in construction and sales departments

The definition of performance for the different departments, based on the developed company strategy, was very fruitful and led to a large number of improvements and purposeful KPIs. The implementation of the Performance Management System in the different departments was carried out through specific evaluations of used working hours, customer satisfaction data, as well as offers and commissioned projects in the Hidden Champion. The consideration of the obstacles and the critical analysis of pre-defined figures and KPIs were solved individually. This could be done in a more efficient way with workshops and training for the user of the Performance Management System.

Improvement of working hour statistics for all departments

The working hour statistic was already used by the Hidden Champion. The preparation of the data in the Performance Management System led to a weekly meeting to evaluate customer project progress.

Earned Value Analysis in construction departments

Over the course of Action Research cycle 2, the application of the Earned Value Analysis was discussed and performed in one pilot project. Results were very promising for improving the evaluation of project progress. The integration of the “earned value” enhances the information for every task in the customer project regarding performance and progress. Earned Value Analysis is based on a project plan and quantifies progress using variables ,such as “work to be accomplished”, “planned value”, “earned value”, and “budgeted cost/effort of work performed”. These indicators allow statements regarding the progress of the project and forecasts of time and cost/effort performance. Further evaluation was planned for the past project phase to improve the Hidden Champion’s activities.

Market analysis and competitor analysis

The market and competitor analysis led to a greater awareness of the unique position of the case Hidden Champion in their niche market and identified further fields of application of the product. Examples for this additional field of application were the production of wings for wind turbines and the production of washbasins and toilets from synthetic resin with additional positive features for the product.

Partnerships with external knowledge and innovation partners

Regular meetings including external partners with the focus on design improvements had a positive effect on the design of the machines and the knowledge of the employees. Productivity in design and production increased through a variety of small improvements on the product and the production process.

Training program for employees

The systematic training of the employees, including the identification and assignment of main tasks and the training of the respective representatives, improved the knowledge of the employees as well as their identification and motivation. This job enlargement had a positive effect in the company with positive effects on productivity, motivation, and engagement.

Improvement of the usage of the Performance Management System

The implemented Performance Management System is very helpful in analysing and evaluating the developments of the different departments in the Hidden Champion. After an initial spark, the participants begin to develop their own performance management perspective on the company. The heads of departments tried to answer questions which have arisen in daily business with information provided by the KPIs of the Performance Management System. An effective and efficient process of focusing on the strategically relevant KPIs should be led by the general management of the Hidden Champion.

4.4.4.2 Staff conference

In July 2017, a research conference with the university supervisor of the research project, the practitioners, and the researcher was performed. The conference took place at the end of the taking action phase and in the evaluation phase of the second Action Research cycle. The following reflections were part of the outcomes from the supervisor conference:

- The research project was very fruitful for the company itself – financial and non-financial measures improved over the last 18 month
- Understanding of the financial figures of the company was vital – transparency of balance sheet and income statement was important for performance improvement
- Training of heads of departments, regarding leadership and interpretation of financial and non-financial KPIs, was necessary and essential for project success
- Momentum in the research project follows understanding of Performance Management concept
- Lack of competencies / resources / knowledge was addressed through the cooperation with external partners and training programs in the case company
- Improvement of processes was a result of better understanding of the processes – fruitful discussions and measures derived
- Working hour statistic is an excellent tool for improving performance
- Motivation is important to overcome obstacles – was achieved through involvement in strategic discussion
- Short-term priorities dominate day-to-day business and produce a lack of orientation on long-term and strategic priorities – question of leadership
- Training program was very helpful in improving productivity and improving machines
- Danger of use of performance as an instrument and an “end-in-itself”
- Definition of KPIs, figures, and interpretation of data and results were important – especially the derived measures

- Implementation of Performance Management led “automatically” to change and the improvement of procedures

The conference came to the result that the research project worked well for the case company and financial and non-financial performance improved during the research project. Research activities were planned and performed well and the proposed project plan was, more-or-less, implemented as scheduled. The significant deviations were caused by difficulties pertaining to availability of human resources in Action Research cycle 1 of the research project.

4.5 Data collection and analysis summary

Herr and Anderson (2015) discuss that fact that Reports on AR projects focus more on the social process and the developments than on the presentation of a concise explanation on propositional knowledge of the findings (Herr and Anderson, 2015). The findings of an AR project as a general rule demonstrate a deepened understanding of the phenomenon under study, which is achieved through changes in the behaviour of the participants - in the current research project the improvement of the financial and non-financial performance of a German HC in the special purpose machinery manufacturing sector. A solid research project should be bases on data collection, interpretation, results and evidence that back up the findings. In the current research project a variety of meetings, presentations, workshops, documents, interviews etc. were analysed in a mixed method approach of data collection and analysis. In Table 54 - Data collection in research project the methods of data collection, interpretation, the results as well as the evidence to back them up are presented.

Data collection	Interpretation	Results	Evidence
Action Research Methods and qualitative data			
Project management, project plan, work breakdown structure	Regular evaluation meetings with university supervisor and board of case company	Decisions regarding project progress and resource allocation	Project management documentation, project plan, work assignments status reports, project controlling reports
Semi-structured Interviews (26)*	Computer assisted data analysis (coding and interpretation of findings)	Evaluation of the initial situation and the result of the research project	28 Recordings of interviews, transcripts, NVIVO data, coding, code lists and statistic
Agenda and minutes of meetings (128)*	Project progress, priorities, activities, and current developments in the reseach project	Project management data, decisions, changes in the research project	128 meetings incl. documentation with agenda, minutes, quotes from meetings

Data collection	Interpretation	Results	Evidence
Agenda, workshop documentation and minutes of workshops (18)*	Content related participative workshops and focus groups	Development of content e.g. project plan, strategy, KPIs etc.	18 Workshops incl. documentation with agenda, presentation minutes, workshop documentation, quotes from workshops, photos of metaplan boards, KPI statistics
Logbook of researcher (field notes 161)*	Reflective practice with university supervisor and staff work in the project	Reflective practice, improvements for the project	Log book of the researcher, quotes and documentation, photo documentation from case company
Quantitative Data (456 documents and data)*			
Financial data of the company, income statement, balance sheet	Documentary and comparative analysis of financial figures, e.g. regression analysis with excel	Identification of variations, differences, and development of financial figures	Income statement and balance sheets of the case company, excel sheets with KPI analysis, statistics and analyses from excel
Non-financial data of the company, KPIs like working hour statistics and throughput times	Documentary and comparative analysis of non-financial figures, e.g. regression analysis with excel	Identification of variations, differences, and development of financial figures	IT based KPI documentation of no-financial figures of the case company, excel sheets with KPI analysis, statistics and analyses from excel

Table 54 - Data collection in research project

(X)* = number of different documents compiled within the research project

5 Discussion and Recommendations

5.1 Introduction

The discussion chapter of this thesis focuses on interpreting, comparing, and contrasting the findings in relation to the existing literature, pointing out what is entirely novel in the findings and how the findings help to extend understanding and the existing literature. The section starts with the discussion of the practical contributions followed by the discussion of the theoretical contributions. The Action Research methodology used in this project will also be reflected and the validity of the findings will be discussed.

5.2 Practical contribution

An important contribution in Action Research cycle 1 was the detailed analysis and reflection of the initial situation of the case company. The researcher performed interviews with the management team and did a qualitative analysis. The results were presented and discussed with the management team in the case company. The results uncovered the problems in the day-to-day business from different perspectives of the stakeholders and confirmed that SME characteristics, from the literature, occur as limiting factors in the case company. The findings had an eye-opening effect and provided a great deal of motivation on all levels of the case company to participate in the research project. The presentation of the results in a meeting with the senior owner, the two owner brothers, and the heads of departments was a critical task at this stage of the project due to also addressing the lack of managerial skills in the Hidden Champion. It was interesting to observe that the open and trustful feedback from the interviews and discussion of the results produced a lot of motivation for the next steps of the project. One quote from the head of the sales department was: *"It's interesting to see that our problems are not only my experience – we all see the problems in our company! And other SMEs have often even the same problems – the awareness of this subject can be our chance to overcome the limitations and to be much better than our competitors. I see and understand, it is necessary for us to change this behaviour and use our strength and motivation to improve our processes."*

The development of the explicit performance management strategy was a positive contribution during the course of the project, and was especially valued by the heads of departments. The heads of departments felt much more comfortable with a clear and explicit formulated performance management strategy. This strategy gives orientation and a frame for the development of their own departmental strategies, and was completed through workshops from the researcher with the heads of departments.

The derived strategy maps for the different departments were an important contribution in the research project. These strategy maps operationalised and prioritised strategic performance objectives, improved the strategic alignment, and strengthened financial and non-financial performance. The researcher informed the heads of departments on up-to-date KPIs in these workshops. The resulting strategy alignment and improved communication on strategic objectives accelerated the positive development of the case company by working on the same priorities. The observed positive effect of the resulting alignment in the case company was discussed in the literature by several authors (Ates, 2013, Bititci et al., 2016, Bititci, 2015, Huselid, 1995, Patterson et al., 1997).

Another positive contribution was achieved in Action Research cycle 1 through intensive training on the analysis of financial figures; this was done by the researcher and involved owner brother II. The improved understanding and interpretation of the financial situation from owner brother II, including intensified communication with the heads of the departments, led to transparency regarding the financial situation of the company. This led to improved resource allocation decisions and positively changed the cooperation of owner brother II with the heads of the departments. The improved participation and involvement led to qualified exchange on financial and non-financial performance and led to informed decisions. This result was also observed by Garengo et al.(2005), who analysed the implementation of Performance Management Systems in SMEs (Garengo et al., 2005).

The critical reflection and change of the leadership style was another practical contribution realised by all heads of departments and owner brothers I and II. The increased staff involvement led to increased motivation and engagement of the employees. The large number of small improvements adds up to a substantial improvement in the case company according to the heads of departments. This positive effect of the sum of small improvements is also reported in the literature (Bianchi et al., 2015, Sousa and Aspinwall, 2010, Sousa et al., 2006)

From the beginning of the research project there was a need to implement business intelligence software. The software contributed to the effective the analysis of the KPIs by the heads of departments. This was also planned and started in Action Research cycle 1 and was completed in cycle 2.

The second Action Research cycle carried on with the positive impact on the financial and non-financial performance development of the Hidden Champion. Measurable results were the improvement of financial figures of the Hidden Champion (revenue and return on sales), combined with a better understanding and external presentation of the figures for positive development. This was especially valued by the supervisory board of the case company and by the principal bank. The improved internal presentation and understanding contributed to improved internal transparency for the heads of departments. The financial performance developed very well - during the project the revenue increased from 23.3 to 26.0 million € = +11.6%. At the same time, the return on sales increased from 13 to 17% = +4%. The contribution margin increased by approximately 800.000 EUR per year. Several studies have reported the positive effects of Performance Management implementation on financial and non-financial performance in larger companies and SMEs, especially when linking strategy to operations, however most of these studies did not publish concrete figures (Banchieri et al., 2011, Brecher et al., 2016, Edinburgh Group, 2017, Hu et al., 2017). A recent study, published from Accenture in 2016, came to the result that 94% of surveyed managers (of 1,050 leaders) believe that Performance Management improves Business Performance (Brecher et al., 2016).

The workshops with the mechanical and electrical construction department contributed to the improved understanding of their activities, including the improvement of working hour statistics. The researcher informed the heads of departments about the Earned Value Analysis in order to improve progress reporting of customer projects and contribute to a better prognosis of the technical and schedule performance of projects. In combination with better communication with the sales engineers on customer satisfaction, which was set up in the first Action Research cycle, a substantial improvement in customer project performance was achieved. The sales engineers needed better information on the internal project progress of the construction and manufacturing departments and wanted to inform customers about the probability of fulfilment of the delivery date, or expected postponements, on customer projects at an early stage. They supported the implementation of the Earned Value Analysis to get this information in every stage of a customer project. The improved information was easily calculated by using the Earned Value Analysis (EVA) (Fleming and Koppelman, 2010). EVA was not known in the company and it was interesting to observe how the employees, who had a lot of project management experience, absorbed the easy instrument of EVA in their customer projects. The implementation of EVA for all customer projects is likely one of the next improvement projects of the case company.

Another practical contribution of the research project was that momentum and motivation emerged in the workshops through increased knowledge and through positive results. The growing number of available KPIs enabled a self-reinforcing process of motivation. Customer project performance in the case company improved through better transparency, communication, resource allocation, and decision making. Management attention, motivation, and knowledge were necessary to start the process of performance management, momentum was gained and the number of KPIs increased as an evolutionary process of answering strategic and operation questions. This effect was also reported in several studies regarding the implementation of Performance Management – the first positive results start a reinforcing effect for Performance Management activities (Bianchi et al., 2015, Sousa and Aspinwall, 2010, Sousa et al., 2006).

5.3 Theoretical contribution

The design and implementation of performance management in the case company produced a significant positive change in the case company. The main theoretical contribution of the research project is the SME and Hidden Champion tailored approach for the design and implementation of Performance Management, which was novel. The research project contributes with the following insights and knowledge which add aspects to the body of knowledge. The contributions should be viewed as originating from a single case study with limited generalisability.

Several authors argue that the changing environment of SMEs over the last few years, including the negative economic effects of the financial crisis of 2008, led to negative consequences for the SMEs and increased competition. Market and business globalisation, increased customer focus, advances in ICT, knowledge based economy, and lack of financial resources are well-published trends facing SMEs (Bianchi et al., 2015, Busi and Bititci, 2006, World Bank, 2009) also observed in the case company. In the past, the biggest problem for the case company was providing the necessary resources (finances, HR) for globalised activities (service, sales etc.), like opening subsidiaries in the Far East (Japan, China) or other countries.

The case company was a typical SME and confirms published SME characteristics, such as limited resources, short-term priorities, internal operational focus, lack of external orientation, learning by doing, lack of managerial skills, and owner orientation, which were found in the SME. The two most relevant characteristics were the ever-present lack of resources, especially financial and human resources, combined with the lack of managerial skills. These results are analogous to the findings of other recent studies on the subject of organizational performance in SMEs (Ates, 2013, Garengo et al., 2005, Taylor and Taylor, 2014). The structural lack of financial and human resources for SMEs has been recognised and is the subject of recent international publications, such as the OECD, and national institutions, like the KFW bank in Germany (KFW Research, 2016, OECD, 2016a, OECD, 2016b). On the other hand, Bititci (2012), Ates (2013) and Taylor and Taylor

(2014) concluded that SMEs increasingly play a key role as engines of economic growth and innovation in industrialised world economies. SMEs have a level of agility, implicit market knowledge, innovative capabilities, and often operate in global markets and generate opportunities on a global scale that allow them to prosper (Bititci et al., 2012, Ates, 2013, Taylor and Taylor, 2014). The case company belongs to this kind of mainly family-owned SME with a narrow market focus acting in a worldwide market – this kind of SME is labelled a Hidden Champion (Simon, 1992a, Simon, 2012). This research project adds knowledge to the field of Performance Management research for SMEs and especially the narrow field of research on Hidden Champions.

The main theoretical contribution is the strategy map for SMEs and Hidden Champions, shown in Figure 9 - Generic strategy map for Hidden Champions and SMEs and the procedure for implementation, shown in Figure 37 - Framework for the implementation. The developed strategy map was based on the second generation BSC concept of Kaplan and Norton (1996), which is a strategic planning and management system. Kaplan and Norton added, in 2001, the element strategy maps regarding the four different perspectives: financial, customer, process, and learning and growth perspectives (Kaplan and Norton, 1996, Kaplan and Norton, 2001b). Empirical research has shown that the BSC has positive effects on company performance and that strategy maps potentially picture cause-and-effect relations and improve decision-making processes (Hu et al., 2017). The literature shows that SMEs, especially, encounter difficulties in formulating strategy maps (Malmi, 2001) and that the majority of companies in Germany, Austria, and the USA fail to develop strategy maps (Davis and Albright, 2004, Speckbacher et al., 2003). The analysis of the initial situation of the case study has shown that the barriers to implementing advanced managerial practices, e.g. a BSC - based on observed SME characteristics, were present in the case company (Sousa and Aspinwall, 2010) and confirm the results of the literature review of section 2.8 - Performance Management in SMEs and Hidden Champions. The discussion of the Performance Management approaches for SMEs showed that most Performance Management concepts are based on a deductive way of thinking (Sousa and Aspinwall, 2010). In their study, Sarmiento and

Devins (2013) showed that the design and implementation of a deductive Performance Management concept was resource consuming, without adding direct value for customers (Sarmiento and Devins, 2013). In contrast, inductive Performance Management approaches build on limited internal resources and partial external information and include continuous improvement, innovation, and change (Bititci, 2015, Pekkola and Ukko, 2016, Saunila, 2016). The adopted approach for the implementation of Performance Management was characterised through an inductive procedure, which was successful and improved the financial and non-financial performance of the case company. The approach for implementation is shown in Figure 37 - Framework for the implementation.

Figure 37 - Framework for the implementation of PM

The novel generic strategy map for SMEs and Hidden Champions was developed from the literature (see 2.11 - Strategy map for performance of SMEs and HCs) due to a missing tailored approach for Hidden Champions. The generic strategy map suggested general fields of actions, based on SME and Hidden Champion characteristics, to improve financial and non-financial performance. The approach was validated in the case company and supported the positive effect of the chosen inductive process for the design and implementation of the Performance Management approach. Figure 9 - Generic strategy map for Hidden Champions and SMEs shows the used and validated strategy map which worked very well for the case Hidden Champion. The strategy map was based on the four basic dimensions of capital - financial, structural, relational, and human capital, and pictured them as four dimensions in a tailored Balanced Scorecard (BSC). The fifth, and overarching, dimension describes the strategy and leadership perspective, which formulate the strategic orientation of the company and, subsequently, enable the alignment of the formulated strategy.

Another theoretical contribution was the confirmation of the validity of success factors for implementing significant change, identified in the literature (Chrusciel and Field, 2006). Chrusciel and Field (2006) argue that one success factor for change is understanding the initial situation of the company. To maximize the opportunity for success, it was recommended that any action plan should start with an analysis, feedback, and reflection, to confront the employees with the necessity of change. Before taking action, appropriate planning should take place to develop a unique framework specific to the individual company. Chrusciel and Field (2006) further argue that all involved participants benefit from the process of change and learning in the organization, which minimizes frustration and maximizes the potential benefits. This positive effect of a participative design was confirmed in the research project. Another important success factor, which Chrusciel and Field (2006) identified, is the assessment (with feedback) of the actual change and the process and the tools used to complete the action - this was done in the research project through the evaluation conferences. By addressing the critical factors for success, the company became a more flexible organization that is able to

deal with change in the future. The positive effect of the critical success factors, such as initial analysis, substantial planning, the involvement of employees, and the performed assessment of change, was confirmed in the case study (Chrusciel and Field, 2006).

Another theoretical contribution of the research project was that the predicted important future role of worldwide supply chains was observed. In his paper about the future of Performance Management practices, Bititci (2012) predicts that the performance of supply chains will be important and will be arranged in the form of “collaborative organisations” across organisational boundaries (Bititci et al., 2012). He claims that a collaborative organisation represents a virtual organisation that is additional to the organisations that are participating in the collaborative enterprise (Bititci et al., 2012). The positive effect of the closer cooperation and network building with customers, regarding the improvement of customer satisfaction, and the change of the role of sales engineers in Action Research cycle 2 was observed in the case company. The integration into worldwide supply chains was also observed in the case company, e.g. the company had to found a Japanese subsidiary while participating in a Maglev project (Maglev is derived from magnetic levitation). Large Chinese customers of the case company wanted to get local service in their language and sustained availability of spare parts to ensure productivity of the special purpose machines.

Another theoretical contribution is the positive effect of improved communication and intensified management attention and supportiveness on the performance of the case company. The study of de Vries et al. (2010) showed that improved communication is related to leadership outcomes mediated by leadership styles, which was in line with the results observed in the case company. The owner brothers and the senior owner intensified internal communication about strategy and financial and non-financial performance with the heads of departments. The heads of departments changed their leadership style, improved communication with the employees, and implemented a communication process of Performance Management. De Vries et al. (2010)

came to the conclusion that a communicative leadership style had a significantly positive effect on performance (de Vries et al., 2010).

A further contribution supports the study of Gray et al (2015), who stated that a well designed and implemented Performance Management System clarifies goals, processes, and roles, and aligns behaviour within the organisations strategy (Gray et al., 2015). This subsequently improved the resource allocation and decision making on all levels through understanding of the company's main performance drivers, avoidance of silo mentality of employees, cooperation between functions, and clarity about the organisation's strategy.

5.4 Reflection on Action Research methodology

The choice of the democratic and participative Action Research methodology had a positive influence on the research process. An important contribution of the Action Research Design at the beginning was the mutual definition of the research objectives with the stakeholders of the research project (senior manager, two owner brothers, heads of departments, and university supervisor), which was intended to ensure the focus on relevant research subjects and, subsequently, the application of findings into practice. Several meetings were performed to find a consensus regarding the different stakes and motivations of participants involved in the research project in order to define the research objectives. The research objectives were finally agreed between the researcher, the Hidden Champion, and the university supervisor. This was an important step in the research project and led to acceptance and motivation from all stakeholders. This was also in accordance with Herr and Anderson’s (2015) and Reason and Brown’s (1993) work on democratic and emancipatory approach action research projects. In their view, participation leads the participants to a better understanding of their world, sense making of planned activities, and motivation to develop new and creative ways of change, which was achieved with this procedure (Reason, 1993, Herr and Anderson, 2015).

Another contribution, in terms of the research project, was the mutual definition of the cooperation, procedures, resources, time frame, and desired outcomes with the stakeholders in the case company in form of an Action Research process and project plan. It was agreed on a 2-staged Action Research process of Performance Management design in the first stage and Performance Management implementation in the second stage. A positive and trustful working atmosphere was present from the beginning of the research project with motivated participants due to the mutual definition of the purpose of the project plan. This experience also supported the positive effect of the chosen participative action research approach which was formulated by several authors like Bititci (2007, Bourne and Bourne (2011) and Ates (2013).

The participants were cooperative, motivated, and positive in the research project, especially in the evaluation of the activities of Action Research cycles. The internal (project team) and external feedback (university supervisor) was very helpful in adjusting the planned activities for the Action Research cycles. A positive experience was the rising motivation and improved sentiment of the heads of departments and the employees in the project. The more the positive effects of the research project were experienced by the participants, the more their motivation grew. This positive reinforcing effect was also reported in the literature (Bititci, 2015, Pekkola et al., 2016), especially in inductive frameworks for the design and implementation of Performance Management Systems

The cooperative development and implementation process of the Performance Management Systems in Action Research Design improved the internal communication regarding the understanding of the initial situation and desired objectives, definition of activities, implementation of activities, feedback, and evaluation. The intensified discussion of actual and future customer needs and customer satisfaction, including opportunities for innovations, enabled a closer relationship with customers. Another positive effect was the renewed cooperation with external partners, like universities, to enhance the knowledge and develop new, or improved, products of the case company.

The intensified internal and external communication improved the performance of the Hidden Champion, as proposed by several authors such as Bititci (2007), Bourne and Bourne (2011) and Ates (2013).

The research project implied a change of the role of the researcher from a professional consultant, who provides expert advice on the special field of quality management and project management, to being an external researcher conducting a participative Action Research Design project. The role change in this project was discussed with the senior owner and the two owner brothers, especially the fact that the researcher is facilitating intended change in the company and that there was no proven method for the financial and non-financial performance improvement in Hidden Champions. The conclusion of this discussions was that the former role as management consultant and the positive experience in cooperation from past consulting projects led to a trustful and positive relationship between the researcher, and the senior owner, the two owner brothers, and heads of departments. This trustful relationship was the basis for the willingness to cooperate in the research project, which had some uncertainties regarding the planned results. This positive experience supports the publication of Meister et al. (2002), who formulated a strategy to become a “Trusted advisor”. They stated that trust had to be earned and deserved and that one had to do something to give people the evidence on which they can base their decision of trust. They formulated a “Trust equitation” with four primary interrelating components of credibility, reliability, intimacy (which have a positive effect), and the degree of self-orientation (which has a negative effect in relation to trust) (Maister et al., 2002).

5.5 Validity of the findings

The external and internal validity of the findings are crucial to the overall outcome and conclusions of this thesis. Reason and Bradbury discuss the subject of validity as a question of practice and outcome. They use the expression of democratic validity, which means the involvement of all parties who have a stake in the problem under investigation (Reason, 2006).

To enhance the internal validity of the case research, several authors strongly recommend triangulation, mixed methods approaches, as well as frequent debriefing sessions. Triangulation and mixed method approaches point to positivist notions of validity and are not adequate for a study done under an interpretivist epistemology. Nevertheless, the selected research design consists of different methods in the case research, either of a qualitative or a quantitative nature. All of these methods contributed to the validation of the theses in this research project. The collaborative design in Action Research and, furthermore, the regular debriefing sessions and reflections among participants in the project team, and with external independent researchers, also enhanced internal validity. Therefore, adherence to methods that enhance internal validity can be seen as a given in this research process.

With regard to external validity, results of this study confirm the initial presumptions for SMEs and Hidden Champions, which are derived from the literature. However, findings of this study are limited to the characteristics of this Hidden Champion, working in the special purpose machinery manufacturing niche on a worldwide market.

Methods of enhancing external as well as internal validity were applied in the research design and process. The remaining limitations, particularly in terms of external validity, predominantly lie in the nature of the case research and cannot be completely avoided.

6 Conclusion and limitations

This chapter provides a summary of the thesis and synthesizes the research findings and discussions. The approach of the research project is restated and the achievements of the research objectives are discussed. The possible implications of this research project regarding theory and practice are presented. Finally, this chapter addresses the research limitations and areas for future research.

6.1 Introduction

This thesis presented a process for developing and implementing a Performance Management approach in a Hidden Champion following an Action Research Design. The aim of the research project was to improve the financial and non-financial performance of a Hidden Champion through implementation of Performance Management. The procedure was first to develop a tailored Performance Management approach based on the existing literature – considering the characteristics, advantages, and limitations of SMEs and Hidden Champions. This theoretically developed approach was presented, discussed, and adapted in a participative process with the owners and managers of the case company. The second task was to implement the adapted approach using a participative Action Research Design in a case study. The chosen approach differs from other approaches because it is specifically designed to accommodate the requirements of SMEs and Hidden Champions. The addressed research objectives of the research project were:

- To design a Performance Management approach for a German Hidden Champion in the special purpose machinery manufacturing industry as an aid for improving its financial and non-financial performance;

- To implement and validate this Performance Management approach using Action Research Design;

- To reflect on the results of the implementation in Action Research Design for other Hidden Champions and SMEs.

In order to realise the above stated research objectives, a SME and Hidden Champion tailored Performance Management approach, including a strategy map and a framework for the design and implementation of the Performance Management System, was developed, implemented, and validated in a longitudinal case study.

6.2 Findings of the research project

The fieldwork of the two performed Action Research cycles of this case study took approx. 18 months, starting in April 2016 and ending in October 2017. However, the research project preparation started in Autumn 2015 and the research project finalisation phase ended in December 2017. The gross time for the research project, including preparation and desk research, took in total 27 months. The research objectives were processed during the course of the research project with the twofold focus of contribution to both theory and practice. The outcomes of this study can be classified into five categories.

First, the objective to improve financial and non-financial performance was achieved for the Hidden Champion in the case study. Evidence was provided through improvement of all four capital dimensions (financial, structural, relational, and human capital). The financial capital was improved through the increasing revenue of the case company (23.3 to 26.0 million €, +11.6%) and increased return on sales, +4% from 13 up to 17%. The contribution value for the Hidden Champion increased approximately 800,000 EUR per year. Non-financial improvements were realised regarding the structural capital, e.g. through decreased lead time in the construction departments (approx. 20%). The relational capital was also increased through intensified customer support from sales (>80% customer satisfaction) and intensified internal communication. Some further, not directly measurable, improvements related to human capital were achieved, such as, increased knowledge and managerial competence, improved leadership style, more external information, and increased knowledge and market transparency.

Second, the developed specific strategy map for SMEs and Hidden Champions, derived from literature and adapted through discussions in the case company, worked well to provide a framework for the development of a tailored Performance Management System in the Hidden Champion, including the creation of subordinated strategy maps for the departments. The participants identified relevant fields of action and were able to formulate purposeful KPIs and measures that improved the financial and non-financial performance of financial, structural, relational, and human capital in the case company.

Third, Action Research was found to be an effective method for the design and implementation of Performance Management in the Hidden Champion. Participation had turned out as a positive and self-reinforcing process. Evidence was provided through measurable financial improvements. Non-financial improvements were achieved through increased reflective practice (feedback culture, leadership style), increased knowledge (external information, performance indicator training), and improved behaviour and motivation (participation, performance strategy alignment).

Fourth, the applied participative Action Research approach encouraged greater management attention to performance in the Hidden Champion. This resulted in improved communication and changed the behaviour of the two owner brothers and heads of departments. This led to improved transparency of financial and non-financial performance in the case company. The development of a performance strategy also brought positive effects, such as improved strategic alignment, purposeful resource allocation, faster problem solving, higher motivation of employees etc. This, additionally, positively contributed to the financial and non-financial performance in the case company.

Finally, the findings indicate that the implementation of Performance Management in Action Research Design for other Hidden Champions and SMEs should also have a positive effect. In general, strengthening of the financial, relational, structural, and human capital should have a positive effect on the overall financial and non-financial performance of a company, especially

when focusing on aspects of the tailored strategy map for Hidden Champions. Every company has to find their own specific measures and KPIs for their individual tailored strategy map, as well as derive improvement activities to increase performance. The pictured way of designing and implementing a tailored Performance Management in Action Research Design promises to be an effective way for other SMEs and Hidden Champions. The generic process could likely be transferred to other Hidden Champions. The probable effect is certainly company specific, but will be positive due to the focus on, and strengthening of, the capital dimensions that enable performance improvements.

6.3 Reflection of the research process

From the research perspective, this thesis addresses the theoretical and practical aspects of Performance Management and the use of Action Research in SMEs and Hidden Champions. The results of designing the generic strategy maps, considering the characteristics of SMEs and Hidden Champions, and the implementation of the Performance Management approach are evaluated and validated. Experiences, obstacles, and weak points are summarised and potential improvements for further research are suggested. The resource consumption, during the design and implementation of the Performance Management approach, in this research project is listed to inform potential interested scholars, SMEs, and Hidden Champions.

6.3.1 Reflection on the practical contribution

The financial and non-financial performance of the Hidden Champion developed positively throughout the research project, and the feedback from practitioners of the case study was positive. The developed strategy map, considering general characteristics, advantages, and disadvantages of SMEs and Hidden Champions, was useful for the development of a tailored performance strategy and for operationalizing strategy maps for the case company. The implemented measures improved the allocation of resources and led to the improved financial and non-financial performance of the case company.

The future benefits of using the developed Performance Management System in the company is that they now have a structured process for continuous performance improvement, which is fast, resource efficient, and helps to surface important performance issues, as well as facilitate flexibility. During the course of the project, an analysis of the initial situation of the case company, in the form of qualitative interviews, coding of the texts, and a subsequent analysis of the codes, including a feedback presentation, was performed. The presentation of the results was important for the senior owner, the two owner brothers, and the heads of departments, and produced conscious knowledge regarding performance issues and, additionally, improved motivation for the project, which was an important step in the project. Lack of resources in SMEs and Hidden Champions was one of the characteristics found in the literature and accompanied the discussions, workshops, and definition of measures in the case company. Retrospectively, the project needed the following resources.

- Approximately 75 working days research workshops and meetings in an 18 month net project time in the Hidden Champion
- Internal resources of management staff with factor 2-6 for the participation in the project (approx. 300 working days in total)
- Internal extra work of approximately the same number of days as workshops and meetings (approx. 300 working days in total)
- Investment of approximately 35,000 EUR for the business intelligence software
- The researcher invested around 390 working days (approx. 3,120h) in the research project in the last 2,5 years, plus work for the preparation of the research project and the pilot study in course of the DBA program (approx. 95 days = 760h)

Calculating, with a day rate of 400 EUR/day, the total cost of the project was ((300 days workshops + 300 days internal work) calculated with 400 EUR/day + 35,000 EUR) = 275,000 EUR for the case company. The researcher acted in a dual role, also as project manager, and invested 390

work days (á 400 EUR) = 156,000 EUR plus the pilot study of 95 days (á 400 EUR) = 38,000 EUR. If we summarise the costs, a total investment of 469,000 EUR was made through the research project. The research project led to improved financial performance of the case company - the revenue of the Hidden Champion increased from 23.3 to 26.0 million €, +11.6%, and the return on sales increased by+4%, from 13 up to 17%. The contribution value for the Hidden Champion increased by approximately 800,000 EUR per year. The calculated return on investment of the research project is for the first year 170% (800T EUR contribution margin by 469T EUR investment). The positive effects will continue if the company keeps the implemented changes and will further improve the return on investment. The estimates of resource consumption and return on investment for future projects can now be much improved.

The senior owner and the two owner brothers accepted the planned consumption of resources at the beginning of the research project due to their hope of a financial and non-financial return on the investment. When the positive effect of the research project became clearer, the motivation to participate increased in a self-reinforcing process.

One practical finding of the project was that the researcher should stay in charge of the project management for the entire duration of the project, including the implementation phase, in order to avoid distraction from day-to-day business. During the implementation phase of the project, which involves higher resource consumption, an internal person from the company, designated as an assistant to the researcher with an exemption of 20% of their normal business duties, would have been useful.

- Project manager in charge of all tasks, especially during the implementation phase
- One employee in the project exempt from 20% of their normal duties designated as an assistant to the researcher.

The analysis of the financial figures in the income statement and the balance sheet were important steps during the course of the project. This led to substantially increased knowledge for the owner brother 2, who used this knowledge for the presentation of the situation of the Hidden Champion to the bank and the supervisory board. On the other hand, he gained in-depth knowledge of financial and non-financial resource allocation, cost drivers, and related improvement potential in the Hidden Champion.

- Training in analysis of the financial statement and balance sheet
- Workshops in financial analysis of the Hidden Champion and cost management

In the second Action Research cycle, the established cooperation between researcher and practitioners from the company worked very well. Again, the training and consequent project management assured the continuous positive implementation and improvement of the processes in the Hidden Champion. The pilot project involving the use of the EVA, especially, gave fruitful input and showed how to develop performance practices in the future. The lack of resources was, in this project phase of the second Action Research cycle, again, one of the biggest problems. This turned out to be a question of leadership and decision of resource allocation from the general management, due to a permanent conflict between the day-to-day-business and the research project.

- Training and pilot study regarding the implementation of EVA
- Adequate resources for the research and improvement project
- Leadership style of general management in terms of cooperation in the project and resource allocation in the company

The above final evaluation of the research activities led to a revised implementation strategy, presented in Table 55 - Design for the implementation of PM in a Hidden Champion

Steps of implementation	Description of the steps	Activities
Identify initial/current state **(Definition)**	Managers describe the current state of the SME but do not have facts to confirm it, identification of relevant external data like business sector, region etc.	Identify external factors that impact on business Identify stakeholder and process owner for value streams
Initial step / analysis of initial situation **(Definition)**	Knowledge on performance measurement, presentation of initial situation and maturity, awareness, motivation, and retaining commitment	Analysis of initial situation (Interviews, analysis, feedback workshop) Understand and define value streams Evaluate used performance measures Train management team on performance management and analysis of financial statements and balance sheets
Define and communicate vision, mission, and strategy **(Planning)**	Development of a vision, mission, future developments, identification of stakeholders, identification of objectives as enablers and results	Develop strategy for SME Develop and prioritise objectives for each value stream Definition of strategy maps
Define and prioritise objectives **(Planning)**	Definition of a set of objectives that management provides organisational guidance based on prior steps, link objectives to processes, prioritise objectives due to lack of resources, strategy maps can be built linking the most important objectives to identify possible interactions.	Develop business action plans incl. resource requirements Develop KPIs Plan short-term activities and performance targets Appoint persons with responsibility for performance evaluation

Steps of implementation	Description of the steps	Activities
Develop a PMS **(Implementation)**	PMS design on the information gathered in previous steps depending on the characteristics of the organisation monitoring of certain variables associated with objectives.	Data collection Data analysis Set targets Action plan design Action plan implementation
Plan implementation **(Implementation)**	Development of knowledge, improvement plan, evolution of objectives, performance measurement records	Communicate company's performance, strategic objectives Implement action plans, change programs Train, Invest Communicate with suppliers, customers and competitors Interact with trade unions
Implement actions - use phase of the PMS **(Implementation)**	Most important step which will result in success or failure, objectives should be clear and aligned with actions, moving towards fact-based decision making	Check staff performance, financial and non-financial performance, KPIs Monitor supplier, customer, competitor, macro environment
Review, standardise and learn - review phase **(Analysing and reviewing)**	Review progress / dissemination of the results throughout the organisation, actions may be taken to ensure that the achieved gains are maintained, through standardisation, learn how to deal with changes and to adapt to their objectives and environment.	Review stakeholder expectations, strategy, business goals and objectives, values, action plans, Revise KPIs, measures Define improvement activities Feedback Reward

Table 55 - Design for the implementation of PM in a Hidden Champion

6.3.2 Reflection on the theoretical contribution

Over the course of the project, an SME and Hidden Champion tailored approach for the design and implementation of Performance Management for SMEs and Hidden Champions was developed, shown in Figure 9 - Generic strategy map for Hidden Champions and SMEs and Figure 37 - Framework for the implementation. This approach, essentially, comprises of two components: the SME and Hidden Champion generic strategy map, and the procedure for the tailored Performance Management design and implementation.

The generic strategy map for Hidden Champions focuses on financial and non-financial improvements for the four dimensions of financial, structural, relational, and human capital. The result for the case company is an individual and tailored performance strategy specific for SMEs and Hidden Champions. The derived strategy maps for the different departments operationalizes the prioritised strategic objectives and facilitates the formulation of business processes, development projects, partnerships, measures, and other aspects for strategic alignment on financial and non-financial performance. The developed procedure of collaborative and participative Action Research Design shows a possible way to fill the gap of the theoretical concept of Performance Management and a valuable practical implementation strategy for SMEs and Hidden Champions.

These two instruments try to fill the identified gaps regarding the often-formulated critiques of Performance Management concepts, like the Balanced Scorecard, especially for SMEs and Hidden Champions. The application of the two developed instruments in the case study confirmed the positive effect on the financial and the non-financial performance of the SME and the Hidden Champion in the case study. The actual research project validated the developed generic strategy map and the implementation framework, with the general limitation of single case studies in mind.

The collaborative and participative Action Research Design led to an evolutional organisational change process, reflection of actual priorities, processes, and activities, as well as learning and education for the executive

staff pertaining to Performance Management. At every moment, the ever-present obstacles have been overcome; a positive momentum began and led to a kind of snowball effect of formulating a number of different significant KPIs to measure performance. Also, the willingness and motivation to invest some resources in data collection and analysis grew as the significance and usefulness increased. One example is the interpretation of income statements and balance sheets by owner brother II, which was very fruitful and positive during the course of the project. In general, the managerial skills of the executive staff improved and led to a positive effect on the process performance and strategy alignment.

6.4 Recommendations for other companies / scholars

The design of the generic strategy map, considering the specific SME and Hidden Champion characteristics, was a key contribution of this research project and deepened the understanding of performance priorities for companies in performance improvement processes regarding SMEs and Hidden Champion characteristics. It was found that designing and implementing Performance Management in a Hidden Champion, following an Action Research Design, worked well. The Action Research approach provided a democratic, participative, and tailored procedure for the research project that combines the stakeholder interests and actual problems of the company with the research objective of implementing Performance Management.

Another essential finding of the research project was that the Action Research approach used complements the beneficial Performance Management approaches, like BSC, with a tailored implementation strategy for SMEs and Hidden Champions.

In the course of the project, two Action Research cycles were performed, which resulted in a vast amount of data that required analysis. The use of different sources of information by different participants in the Hidden Champion (such as Interviews, field notes, and document reviews) very quickly in-

creased the amount of data collected. The organisation of the collected information and data gathered in the project was a time-consuming activity, which could be optimised in the future using a well-defined data management strategy.

The results of the project showed that the constructive and systematic criticism/feedback from the participants and the researcher, in course of the evaluation phase of every Action Research cycle, revealed valuable areas of improvement for the research project itself and the Performance Management practices in the Hidden Champion. In particular, the application of mixed methods research and regular debriefings within the company, and in the form of conferences with the supervisor of the research project and an external academic reduced the risk of false conclusions based upon insufficient or biased data.

Theoretical contributions of the research project were of secondary interest to the stakeholders of the case company. They focused on the practical contributions that solved their performance problem. This is an outcome of Action Research projects with a twofold focus of action and research in the project due to various interests of different stakeholders. The once found balance has to be re-examined due to fluctuating strong influence by the stakeholders of the case company and the university.

Research in SMEs can be particularly challenging due to the obvious reason that the needs and aspirations of SMEs are very different. This study considers only one SME in a unique post-phase of handing over the company to the two sons of the senior owner. While this research is beneficial to other researchers carrying out research into SMEs, it also demonstrates that there is no one ‘general’ solution of implementing Performance Management in SMEs.

Consequently, the critical reflections and weaknesses derived from the applied method are the foundations for further research.

6.5 Research limitations and future research

The limitations of the study related to validity, lie in the fact that the process has only been tested in one company. The results presented here are based on the findings from one Hidden Champion with its own characteristics. Other organisations with different characteristics may derive different information, which could be helpful in attaining a more comprehensive view of Performance Management in Hidden Champions. Therefore, further research using alternative research methods, such as quantitative methods, will overcome this possible weakness.

The process of developing and implementing the tailored framework of Performance Management, following an Action Research Design, in the Hidden Champion was successful and led to improved financial and non-financial performance in the Hidden Champion. Although the process is designed to be flexible and adaptable to the specific needs of companies, for Hidden Champions, this transfer has yet to be proven in practice. Further applications of the framework will enhance the understanding and further improve the developed framework and approach for Performance Management in Hidden Champions and SMEs. Thus, further research is needed on whether or not, the framework is applicable in other contexts for instance, in larger enterprises or other industry sectors. Although consideration of additional companies within this thesis could have enhanced generalizability, this would have exceeded the scope of this study. A future problem for further validation of the findings can be finding adequate companies with a similar initial situation, and the same relationship with the researcher, to gain trustful access and the willingness to work together over a longer period of time and invest a large amount of resources.

Owing to the heterogeneity of Hidden Champions, it is necessary for further research to be carried out to validate the results of this study. This could initially be within the manufacturing sector to identify the types of Hidden Champions or SMEs which might benefit from applying the proposed procedure of Performance Management design and implementation. Addressing internal validity within the case research, e.g. the selection of a customer of

the researcher, could be seen as a potential limitation. However, the company was double-checked as an SME and Hidden Champion to enhance objectivity.

Interpretative research is often criticised for the subjective influence of the researcher. The choice and interpretation of findings were done from a specific perspective, as the researcher never assumed a neutral position. This is especially important in Action Research projects where the researcher is mostly embedded in the phenomena being studied. This possible drawback has been addressed in this research by using material from various sources and the views of different participants and stakeholders. For instance, in-depth interviews were employed to guarantee that the views of the stakeholders as they observe the phenomena were expressed rather than rely solely on the researcher's views.

Action Research is criticised for its lack of rigour and relevance. This limitation has been acknowledged and addressed in this research through the use of principles of a strict participative Action Research approach and the integration of qualitative and quantitative sources to ensure robust findings. Overall, this thesis put high value on internal and external validity and aimed at enhancing both criteria. Although the findings are predominantly limited to a Hidden Champion and family owned SME in the special equipment machinery manufacturing industry, it may be reasonably argued that similar effects are likely to occur in other circumstances.

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